McGRAW-HILL INDUSTRIAL ORGANIZATION
AND MANAGEMENT SERIES

L. C. MORROW, *Consulting Editor*

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Industrial Training and Testing

McGRAW-HILL
INDUSTRIAL ORGANIZATION AND MANAGEMENT SERIES
L. C. Morrow, *Consulting Editor*
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Industrial Training and Testing

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PREFACE

During any modern war, industrial training speeds up. Apprentice training and other long-time training programs fall by the wayside. But what of the fast modern training? It is a formula type of device, infinitely better than nothing, but not applicable to a more stable production with short profits. For this reason, it falls down when peace arrives.

The following pages introduce a method of industrial training designed to be profitable in either war or peace. This material is not a review of all training methods but a plan, with specific recommendations. It includes missing pieces that are often lacking in training.

In brief, it starts with the day a worker applies for a job and ends with the day that he leaves the plant. Not only is the worker tested, but the training plan is under continual test. In it are included methods of improving the worker yearly and of helping him to advance to successful supervision.

The improvement in this plan exists in combining certain known elements in a systematic manner. Opinions are reduced to fact. These facts are reduced to matters of cost. This cost is balanced against the saving that results from training. Thus, training is controlled in the same way as any other production cost.

The views expressed here do not reflect the views of a particular company. Grateful thanks are extended to those individuals with whom the author has worked in many industries, in the government and in the armed forces, who have contributed the successful ideas that serve as the blocks with which this plan was built.

HOWARD K. MORGAN.

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September, 1945.

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CHAPTER I
TURNOVER AND TRAINING COSTS

Training is started in many companies because it is considered a necessary evil. For that reason, inadequate amounts of money are set aside for this purpose. Such training is seldom good. Its cost is always regarded as an extra, to be abolished as soon as the labor market improves.

Before any training program can succeed, the costs must be analyzed, to determine how much can economically be spent for training. It is up to those interested in training to present these costs to their management. It is imperative, therefore, that costs be considered first before any attempt is made to set forth a program. Training costs money, but it can actually save money in its very process.

Training is a part of turnover cost. Thus, turnover must be investigated before training amounts can be determined.

PERFORMANCE AND PERSONALITY

There are dozens of characteristics that go to make up a person. As far as industry is concerned, these may be reduced to two factors: performance and personality. One without the other means little. In certain positions the stress may be on performance. In sales work, the personality factor must be high, but performance must be satisfactory too.

MEASUREMENT BY TEST

There are dozens of tests for performance. There are far fewer valid tests for personality. Qualification in neither can be accurately determined in a short interview.

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No two interviewers have the same outlook or the same reactions to an applicant.

Standard tests are much more impartial and accurate than personal interviews   These tests must be interpreted properly.   A valid test for one position may be absolutely invalid for another position   Fortunately, there is a way of determining the accuracy of the tests.   The subject of testing will be treated fully later.

Valid tests can be devised for any position and these give a greater degree of accuracy than can an interview. The interview must be weighed with the test results before a decision is made to hire the applicant.

Turnover Costs.—Tests are designed to secure good workers and to reduce turnover to a reasonable figure. A certain amount of turnover is necessary to keep a company from stagnation, but a large amount of turnover will wreck a company.   What are these turnover costs?

Suppose that *one out of every two applicants* were hired, turnover costs would be as follows:

TURNOVER COSTS PER WORKER

Securing applicants ($1.00 each).........	$ 2.00
Interviews ($1.00 each)................	2.00
Testing ($1.00 each)...................	2.00
Hiring (applicant selected).............	12.00
Learning (inefficiency-spoilage)..........	100.00
Releasing.............................	12.00
Total cost per turnover................	$130.00

Workers stayed for *an average of two years*.   The cost per employee for turnover was $130 per 2 years, or $65 per year.

A more active testing program is adopted.   Only *one out of four applicants* is now hired, owing to more rigorous testing.   As a result of better selection, each worker stays an *average length of 3 years*.   The costs now change to these:

TURNOVER COSTS PER WORKER

Securing applicants ($1.00 each)......	$ 4.00	⎫
Interviews ($1.00 each).............	4.00	⎬ ($12.00 increase)
Testing ($2.50 each)..............	10.00	⎭
Hiring (applicant selected).........	12.00	
Learning (inefficiency-spoilage)......	72.00	($28.00 decrease)
Releasing......................	12.00	
Total cost per turnover...........	$114.00	

Securing applicants has doubled in cost, as has interviewing. Unit testing cost is raised 2½ times. Twice as many persons are now tested. So testing is five times as expensive. Shorter learning time is required as a result of better selection, saving cost. However, the cost per year per employee for turnover (3 years) is now only $38.

Notice that no intangible factors, such as morale, are included. These can be estimated also, but care must be taken if this is done. Higher productive output and smaller turnover reflect morale and should be used as a criterion.

In summary, valid tests will reduce turnover by selecting better individuals, thus reducing cost. The exact actual figures for any classification of employees of any one company will vary considerably. Applicant testing along is a potent tool in reducing costs. Some late 1944 West-coast semiskilled industries showed a turnover cost of $188 per worker. The average length of employment was 1 year. Testing was largely disregarded, however.

MEASUREMENT DURING TRAINING

The instructor can measure the trainee as to performance and personality by grading the work in training and observing personal traits.

For most positions, a certain amount of training is required. The amount is subject to measurement also, just as is the cost of learning. In fact, the two are related, for training and learning make up a very large part of turnover costs.

A number of costs must be determined before a decision is reached to adopt an active training program.

Training Costs for Workers.—The costs for a position that paid $100 a month in a certain classification were these:

<div align="center">

LEARNING COST PER WORKER

</div>

Supervisor's time loss....................	$ 24.00
Time loss on job at first................	28.00
Material waste over normal.............	20.00
Slowing down fellow workers............	28.00
Total cost per worker...................	$100.00

This determines how much it costs to equip the worker to do his job satisfactorily. Learning costs are usually large with lack of proper training. The amount depends upon the type of position. The more complicated the position, the more important is training.

The reduction in learning cost resulting from better selection by testing was discussed previously. Originally, it was $100 per worker; but, by better selection, it became $72 per worker. This can be shown by modifying the table to the following:

<div align="center">

LEARNING COST PER WORKER

</div>

Supervisor's time loss....................	$18.00
Time loss on job at first................	19.00
Material waste over normal.............	15.00
Slowing down fellow workers............	20.00
Total cost per worker...................	$72.00

An active training program is adopted at this point. The supervisor devotes a number of hours to doing nothing but training. After this program has been in effect for some time, the costs are now found to be

<div align="center">

TRAINING COST PER WORKER

</div>

Salary while in training (4 days)..........	$18.00
Direct training costs (per worker)........	6.00
Supervisor as trainer (for 2 workers)......	18.00
Total training........................	$42.00

LEARNING COST PER WORKER

Supervisor's time loss	5.00
Time loss on job at first	9.00
Material waste over normal	5.00
Slowing down fellow workers	11.00
Total learning	$30.00
Total cost per worker	$72.00

The cost in this case is the same as for learning alone.

It is known that proper training will in itself reduce turnover by giving the worker a good start, free of more common errors. Suppose that it increases the average term of employment of a worker from 3 years to 4 years. The training costs per worker will then decrease from $24 to $18 per year per worker.

Of course, training and learning together may cost more than the learning cost before testing and training are adopted. Here we see them equal. As a rule, training should be scaled to fit this very requirement. It is from this source that the economical amount of training is determined. If this cannot be done, it is high time to call in the methods engineer and have the job revamped.

If a worker has successfully completed certain tests and an interview, it is still possible that he may be eliminated in training. When this occurs, the company must bear a good share of turnover cost. The only saving effected by dismissal at termination of training is the saving in learning costs. This saving alone about offsets the cost of training. The industrial instructor must not feel that he must complete all trainees, and he will not do so when he realizes this important fact. A poor worker will soon be eliminated after training, but by that time he will have cost the company his full learning cost and more. Training will receive a "black eye" when this occurs.

SUMMARY OF TURNOVER COSTS

It is now time to review the turnover table. Instead of one out of every two workers, one out of four is hired.

The turnover was once every 2 years per worker. It has now become once every 4 years.

Items considered	Original system	After testing was adopted	After training was adopted also
Turnover rate...................	2 years	3 years	4 years
Turnover cost...................	$130.00	$ 114.00	$ 114.00
Turnover cost per worker per year.	$ 65.00	$ 38.00	$ 28.50
Saving per 100 workers..........		$ 2,700.00	$ 3,650.00
Saving per 1,000 workers........		$27,000.00	$36,500.00

Even if the turnover rate stayed exactly the same, testing would still be worth while. Under this condition, training would not pay unless it improved the turnover rate slightly (say from 2 years to 2 years and 2 months). The figures quoted above are realistic ones, however.

TRAINING SUPERVISORS

The training of supervisors is just as important as the training of workers. Training of supervisors reduces turnover in workers, as well as in supervisors. There was no training program for supervisors at the time that the following figures were found.

LEARNING COST PER SUPERVISOR

Superintendent's time loss..............	$150.00
Slowness on job at first................	100.00
Material waste over normal.............	150.00
Slowing down production...............	150.00
Total cost per supervisor...............	$550.00

This amount may be smaller or larger, depending upon the number of men working for the supervisor and the complication of supervision. The supervisor needs training before undertaking his position.

A supervisors' training program is initiated. The costs change to the following:

TRAINING COST PER SUPERVISOR

Salary in training (2 weeks)..............	$100.00
Direct training costs (per supervisor)....	20.00
Superintendent as trainer (for 2 supervisors...............................	100.00
Total training.........................	$220.00

LEARNING COST PER SUPERVISOR

Superintendent's time loss..............	50.00
Slowness on job at first................	30.00
Material waste over normal.............	50.00
Slowing down production................	50.00
Total learning........................	$180.00
Total cost per supervisor...............	$400.00

The question may be asked whether it was not the supervisor's job to train workers and the superintendent's job to train supervisors. The practical answer is "*No.*" Unless a training program is worked out, these men will be too busy correcting errors resulting from lack of training to take time to instruct properly.

MEASUREMENT WHILE WORKING

The measurement of performance and personality at work is important. Some method of knowing the kind of work that each person is doing and the way his personality reacts on others is also necessary.

This can be done by the use of a regular review plan. The supervisor reviews (rates) his immediate employees periodically. From this rating is determined the pay advance, which is so necessary for keeping the best men on the job. Review is treated in detail in a later chapter.

The review plan is another factor in turnover. It causes losses, but it saves some workers, as well. It must be closely linked with the testing and training programs.

Testing for Advancement.—The initial testing program is required for selection of good workers. Although it is rather brief, it is sufficient to cull out many otherwise undesirable employees. During the time that an employee

is working, his supervisor is appraising his performance and personality. He may work well and still not be capable of becoming a good supervisor. How often have the best men who have been moved into better jobs failed miserably?

An advanced testing program is necessary for picking the best supervisor from among those of the workers who look most promising. The cost of this testing is relatively small. It is much more than offset by mistakes that would otherwise be made in advancing the wrong person occasionally. The personality side of tests and review is of increasing importance in supervisory selection.

TRAINING FOR INSTRUCTORS

Before anyone is permitted to instruct, he must be given a short course in methods of instruction. This must be a plan such as is shown later.

It is during the instructor-training period that the worker is tested as to his ability to instruct, as well as to supervise. The instruction work should be done on the worker's time, as it is not required of his present job but for advancement. The time required is not long. The worker must apply voluntarily for this training; otherwise, advancement to a supervisory job will be required first, and the company will then train on company time. It might be supposed that this would cause workers to wait until that time. Remember, however, that by applying for such training, the worker is accelerating his own advancement. A few examples of such advancement are potent proof to doubters.

TRAINING IN LEADERSHIP

As an incentive for instructing fellow workers for jobs on company time, the instructor should be given some courses in leadership. Such courses will not be available to any but those who instruct. Leadership courses are not supervisory courses. They are designed to show a worker how to get along well with his associates. They do not cover pay, review, or other management subjects.

It is well known that workers who instruct learn many things about supervision in the process. Therefore, the advancement method via the part-time instructing route will serve several purposes. It will produce better instructors and thus better supervisors. The instructor will be a man who will be working with the group daily, as well.

APPRAISAL

Testing and training are profitable as long as the costs are kept within economic limits. Appraisal by test, during training and while working, is important. By the time that a worker has been with the company for several months, the following information should have been collected.

Worker	Performance			Personality		
	Test	Training	Work	Test	Training	Work
Black, A. B.....	High	High	Medium	Medium	Medium	Poor
Brown, B. A....	Medium	Poor	Medium	Medium	Poor	Medium
Smith, X. Y....	Passable	High	High	High	Medium	High

These three workers did not work for the same supervisor. By glancing at the results, it is seen that

1. Both test and training are unsatisfactory in measuring Black or, more likely, his supervisor needs better training.

2. Both tests and work characteristics are erroneous for Brown or, more likely, his training was poorly done.

3. The performance test does not seem adapted to Smith, as he did well in training and, most important, at work. The test is probably a poor one.

This is just an introduction to the use of measurements. Much more will be said later of the value of comparisons for appraisal.

The table that follows summarizes the most important cost figures for turnover.

SUMMARY OF COSTS

Cost items	Two-year turnover: inadequate testing and training, cost per year	Four-year turnover: good testing and training, cost per year
Worker:		
Training and learning	$50.00	$18.00
Other turnover costs	15.00	10.50
Supervisor loading:		
Training and learning	27.50	10.00
Other turnover costs	1.50	1.10
Total per worker per year	$94.00	$39.60

The table above assumes one supervisor per unit of ten workers. The worker requires loading of one-tenth of a supervisor as a part of his cost, and thus only one-tenth of the supervisor's costs are shown. Costs of superintendents and other overhead will add more to the worker's cost but are omitted for simplicity.

The difference between these two figures is roughly $55 per worker per year. In a company of 1,000 workers, the saving in good testing and training should amount to $55,000 per year. For 10,000 workers, over one-half million is saved. Those responsible for a program of this sort will feel that this money is theirs to spend on further testing and training. Such is not the case. Sufficient amounts were set aside for training and testing. It is with those previously allotted funds that the program should be continued.

QUESTIONS[1]

1. What three turnover costs increase as fewer workers are selected from a given number of applicants considered for a job?

2. What are two main factors in learning cost?

3. What is the main benefit from proper testing as it affects cost?

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[1] Answers to all questions in this book need be answered by only a word or two in most cases. Problems require more work.

4. Slowing down fellow workers is a part of what specific cost?

5. A worker is found to be definitely unsatisfactory at the termination of his training. What specific cost will be saved if he is discharged then, rather than after a short time on the job?

6. Testing is used in hiring. What is another of its principal uses?

7. What is the process used to measure the worker on the' job?

8. What incentive is offered an instructor-worker as a reward for his interest in instruction?

9. Performance and personality are each indicated on three occasions by a worker. When are these?

10. If the cost of turnover per year dropped to half, what would you assume the new turnover period to be, other factors being constant?

PROBLEMS

Assume the following figures in each of the four following problems:

Salary while in training per day........... $5.00
Direct training costs per day per man...... 2.00
Supervisor as trainer per day............ 9.00

1. Training was occupying a 5-day period. Learning costs per worker were $50 total. An average of three workers were trained in each group. Training was increased to 7 days. Four workers were now in each group. Learning costs per worker dropped to $35. Was this an economical change? (Show calculations.)

2. Training was occupying a 6-day period. Learning costs per worker were $40 total. Two workers were in each group. Other turnover costs were $50 per worker. The turnover period was 3 years. In order to save money, the training program was dropped. Now the learning cost increased to $60. The turnover rate changed to 2 years, with other turnover costs assumed constant. How much money was saved per man in the long run?

3. Learning costs per worker were $40 total. Training took 2 days. One new worker was hired per day on the average.

About what is the maximum training in days justified if this additional training will cut the learning cost in half? (Show calculations for each added day of training.)

4. The direct training costs include models and other visual aids. There are ten men in a training group on the average. A sum of $1,000 was spent for additional aids. This was to be written off over fifty training groups. By the use of these better aids it was estimated that learning costs per man would be reduced by $5, conservatively. Was the expenditure justified and, if so, what was the saving over the fifty training groups?

5. Each supervisor has an average of ten workers. Turnover costs per supervisor were $400 total. During a period of extensive supervisor training, the training of workers was decreased, to allow the supervisors time for their training. The results were that supervisor turnover cost was eventually reduced to $350, while worker turnover increased by $5 per worker. Was the decision a good one from a cost standpoint over this period? How much gain or loss was involved?

TESTING PROGRAMS

Many good tests have fallen into disfavor on account of abuse and improper handling. Tests of the proper type are very valuable.

As an example of this, a man was interviewed by four supervisors qualified in a certain field. Two of them thought that the applicant had certain definite deficiencies. The other two thought that the man was very good. This man would not have been hired if tests had not been used. The tests dealt directly with those qualities which had seemed unfavorable to two interviewers. It so happened that the tests showed the man to be exceptional. He was hired and proved to be what the tests had indicated.

In another case, three interviewers unanimously and heartily agreed to hire a man. He was tested and found to be seriously deficient in one quality. He was not hired. Later, it was found that the man had a very unsuccessful record in another plant, owing to the very quality that had been shown to be low in the test.

"If you don't agree with the tests, then forget them and go ahead" is a bit of advice that is often heard. This kind of conclusion is usually reached by a person who does not understand tests or their meaning.

The most serious mistakes that are made are those of reading far too much into a test result. A few fundamental conclusions can be drawn from any test. It will be shown later that the second most serious mistake is selecting persons for any job on the basis that "the higher the test result, the better the person is for any job." How many times have those with high I.Q.'s proved to be unstable on lesser jobs or difficult for others to get along

with on better jobs? Even this generalization, however, is dangerous, as will be shown fully in this chapter.

In establishing the amount of money to be devoted to training, it was first shown that proper worker selection by test was important. This was for the specific elimination of those who did not measure up to the standards of a company. It was also for the elimination of training costs for those who would probably fail in training. A training division is usually the ideal place in any company to develop tests and to keep a constant check on the results. Remember that testing leads up to training and training leads up to the actual performance of the job. Training divisions should, thus, keep careful track of employees before and after training.

There are actually hundreds of tests on the market today. Some are good, some are mediocre, and a few are absolutely worthless. In the following chapter a careful selection of tests has been made. Other tests may be good, but those that are given here were selected from a fairly broad assortment as the best.

WHAT MAKES A TEST?

A good test is not developed in a few hours or a few days. It requires assembling a great amount of material. After this, to determine its accuracy, the test must be given to various groups. The group must be a representative adult group for industrial purposes, and the test must give fairly accurate results for workers from eighteen to fifty years of age.

There are a number of basic kinds of tests, which are as different as they can be. The types that will be considered are these:

1. Personality
2. Skill
3. Performance
4. Physical examination
5. Interest

All the five primary-test types give "indicated" personality, skill, etc. The test may not actually give the true result at work. It does *indicate* that each quality may be at a certain level. If the indications are poor, the person tested will probably not rise far above the test results. If the results are very good, he may not apply this latent power in his work. Proper supervision will usually bring out the quality in about the quantity shown by the test. That is why tests of the right sort are valuable.

PERSONALITY TESTS

There are a number of factors that, combined, make up the working personality of a person. Undoubtedly, it is interesting to know whether the person is an introvert or an extrovert. It is also interesting to know how he is constituted emotionally. His complexes are good material for the psychological laboratory. The most interesting thing of all is to know his indicated personality as it affects his daily, working, business relations. These factors are not cryptic and do not require expert knowledge to grasp their meaning. Very simply, they are,

1. Job interest
2. General intelligence
3. Social intelligence
4. Leadership
5. Planning
6. Drive
7. Follow-through

The definition of each of these will be treated in the next chapter under the Personality Index. Briefly, that worker is desirable who is interested in working, is reasonably intelligent, gets along with his fellows, has adequate leadership for the job, can plan, can drive himself to do a good job, and can follow through in his duties. All these qualities can be indicated by two simple tests taking 30 minutes. In short, this is the worker's personality.

SKILL TESTS

"Skill" is a word that has been used more and more frequently in the past few years. For testing purposes, skill may be defined as ability to do some one kind of thing.

An arithmetic test can be passed by a person who has never done bookkeeping. A mechanical-comprehension test can be passed by a bright boy who has never operated an industrial machine. A clerical test can be passed by a girl who has never seen a filing system. Nine such tests will be explained in detail later.

PERFORMANCE TESTS

Performance tests are the most common of all. The usual school examination is a test in this category that may best be called a "knowledge test." There are five main things that contribute to performance. These are

1. Quality of work
2. Volume of work
3. Knowledge of the job
4. Attendance
5. Safety on the job

Knowledge of the job is rather easy to test. It consists of a series of questions that apply to a specific job. The task of constructing such a test is usually rather simple and should be carried out with the help of a specific person in a company, engaged in doing the specialized type of work. It deals with specific questions concerning the work for which the applicant is supposed to have qualified himself previously in other jobs. The operating test may often be actual performance, such as making an easy mechanical drawing, driving a bus, flying a plane, or operating a lathe.

Often the *quality of work* is indicated by such a demonstration on the part of an applicant. The written examina-

tion or, especially, the operating test gives some indication of quality.

Volume of work, attendance, and *safety on the job* are harder to measure in a test. Naturally, the loss of fingers, serious injury to any part of the body, and the like, may indicate the safety habits of the prospective worker. Perhaps the worker has been injured by the carelessness of another, through no fault of his own. Certain people believe that such an industrial accident has taught the worker to be careful. Sometimes it has; often it has not.

Finger, tweezer, and other dexterities of the kind will be obvious to the tester in operating tests alone. Thus, performance can be measured by a test that is simple and can be made up for most types of work in a company. It goes without saying that the test should be reasonable and uniform.

PHYSICAL EXAMINATIONS

Tests for physical condition consist of two parts:

1. General appearance
2. Health

General appearance can be judged easily at an interview. This examination consists of observation for obvious defects of face and limbs. It also includes a survey of cleanliness and neatness of clothing, the examiner bearing in mind that the best suit is usually worn to the interview.

Health is judged by a physical examination by a nurse or a doctor—often by both, in the order named. This is still an indication, as a complete physical examination with X rays, etc., is far too expensive for most routine industrial purposes.

INTEREST TESTS

The particular interest of the applicant is usually determined by his past record, his previous training, and his leaning toward one or more of the following classifications:

1. Clerical
2. Computational
3. Mechanical
4. Scientific
5. Sales
6. Social service
7. Literary
8. Artistic
9. Musical

Perhaps the statement that a worker might have a leaning toward more than one of these should be explained. A mechanical engineer should lean toward both the mechanical and the scientific. A lathe operator needs only the mechanical interest. A salesman needs sales interest primarily and, if he is selling mechanical goods, he needs mechanical interest, too. An advertising man needs the sales, literary, and artistic combination for many advertising jobs.

There is an excellent test for interest—the Kuder Preference Record—which will be described later. While the test has been used for hiring, its greatest benefit is in proper placement of dissatisfied employees or for young employees who are moving to specialized jobs.

ORDER OF TESTS

Tests should be given in a definite order, such as the following:

Type of test	Tester	Where given	When given
Personality	Testing clerk	Personnel department	After preliminary interview
Skill	Testing clerk	Personnel department	After main interview
Performance	Supervisor	In working place	Upon reporting to supervisor for acceptance
Physical examination	Nurse or doctor	Medical department	As final acceptance for work
Interest	Counselor	Personnel department	Before advancement or to help in counseling

The preliminary interviewer will eliminate obvious undesirables. The main interviewer in the personnel department should determine by the application form, questioning, and observation that the applicant is at least up to the requirements and that he is not medically disqualified by his own assertions. The applicant may, thus, be disqualified at any one of the various steps.

It may be thought desirable to give a skill test before the main interviewer sees the applicant. It is better to save this cost, as the main interviewer may disqualify the applicant on the basis of the interview or of the personality-test results. Also, this process breaks the testing in two parts, so that the applicant has time to become better adjusted to the testing situation.

The interest test is used by a counselor in order to help junior persons in the company advance or to help desirable employees find work better suited to them if they appear improperly placed. The test can well be used in the case of an employee who transfers from one department to another. Often such a transfer may be made in a wish for one department to rid itself of an undesirable. The counselor should do his best to prevent such an occurrence.

MEANING OF SCORES

Tests were originally devised for certain purposes, and various means of scoring were used. In some tests 100 meant perfect. In others 100 meant normal. In others certain arbitrary units were used.

The tendency is to hire those with high scores and to discard those whose scores are lower. This would have been fairly satisfactory only if a number of tests had been used. One test alone is not sufficient. Again, there is the person with a high I.Q. (intelligence quotient) who might be a social liability. So, test limits must be found that indicate how much of certain qualities are desirable. Also, an upper limit must sometimes be set, above which the person is again not desirable, as the job will not tax his ability. If this is so, he will soon become dissatisfied.

In order to set these limits, some common method of scoring should be employed. In order to understand scoring, it is essential to discuss normal distribution.

NORMAL DISTRIBUTION

Many qualities of human beings are found to exist in about a certain way. For example, there are a few tremendously brilliant persons. There are a few who are extremely stupid. The diagram shows the percentage of persons out of a group tested who are stupid, dull, normal,

bright, and brilliant. There is a variation in the stupid group from imbeciles to morons to stupid to borderline dull.

Now, if the axis along which are variations from stupid to brilliant is divided into five equal parts, sufficient accuracy for our purposes, the following will result:

Percentage of Cases	Degree of Intelligence
7	Brilliant
24	Bright
38	Normal
24	Dull
7	Stupid
100	

Now, if there were a training class of persons picked at random, their grades should be

Percentage of cases	Examination result, per cent	Grade
7	91–100	A
24	81– 90	B
38	71– 80	C
24	61– 70	D
7	60 and below	F

Naturally, the question will immediately arise as to how the examination was made, so that only 7 per cent failed. The answer to this will be discussed later under the topic of training. Suffice it to say that the examination was so made that only the real misfits failed.

Perhaps the issue will be clouded by one more statement. It is necessary to make this statement before trying to unravel the tangle. In testing, the term "percentile" is used for uniform scoring. This is not the percentage grade made. A grade of 50 percentile means that, of 100 persons taking the test, half get more than this and half get less than this. A grade of 99 percentile means that in every 100 persons, only one will be better. A grade of 10 percentile means that there are eighty-nine who are better and nine who are worse.

A Standard Grade System.—These methods seem to be somewhat puzzling. For this reason, a simple system has been adopted and will be used hereafter. It is based on the normal distribution curve. All test results following will be keyed in the same manner. Here is the system.

Grade	Meaning
4	Upper 7 per cent
3	Next 24 per cent
2	Middle 38 per cent
1	Next 24 per cent
0	Bottom 7 per cent

These are easy to remember. They are of sufficient accuracy for the purpose. Both the top and the bottom

7 per cent must be viewed with some alarm. However, for certain difficult jobs, the top 7 per cent are very desirable; while the bottom 7 per cent in any test are usually poor industrial risks.

Another way of expressing the same thing is to relate these uniform grades to percentiles. Not only the grade will be shown, but also the dividing line between grades (hereafter called the "divider").

Grade	Percentile	Explanation
4	97	Outstanding
	93	Divider between 4 and 3
3	83	Above average
	69	Divider between 3 and 2
2	50	Average, or normal
	31	Divider between 2 and 1
1	17	Below average
	7	Divider between 1 and 0
0	3	Unsatisfactory

Suppose that some test result were at 55 percentile. Obviously, this is in the average range. Some might even prefer to show it as 2 plus. In this event a score of 70 percentile would be 3 minus. The additional refinement is worth while in some cases. This divider must be known, as it marks the border line between each of the five grades of 4 to 0, inclusive. The actual percentile at the middle of each grade is shown for interest. The divider, again, is the *important* point.

In most tests, the difference between each of the adjacent five grades is the same (or nearly the same) number of scoring units. This is often found in test data as the standard deviation (S.D.). If a test has 100 as the mean, or normal, and an S.D. of 24, then all other points can be estimated. Thus, 124 would be 3, then 148 would be 4, 76 would be 2, and so on. To get the dividers, add (or subtract) .5 S.D. to the mean and then add (or subtract) 1 S.D. for each other divider.

Finally, the term "centile" means 100 parts, or percentile. The term "decile" means ten parts; "quartile" means four parts. Thus, a grade of 76 percentile is just in the top quartile and about the middle of the seventh decile. These terms will not be used again, but they will explain certain references in the data supplied with most tests—most of which is very confusing because of this simple, but uncommon, terminology. A great deal of information will be found about the validity of tests. Correlation factors, etc., will be found. Let it suffice to state that 1.00 is perfect correlation—never found. Zero is no correlation at all. A −1.00 means a completely reversed correlation. A correlation of .76 means that the test agrees pretty well with the facts of the case as judged by some other standard.

One last warning should be given. Many tests are correlated with the I.Q. score of the person. For that reason, many deduce that I.Q. alone is a sufficient test for hiring. This is not believed to be true. There are the personality, the skill, the performance, the physical condition, and the interest of the person to be considered. The relationship of these to I.Q. is usually not very good, except perhaps that on some tests a bright person will show more indicated skill than will a dull person.

The next chapter will describe certain selected tests and give pertinent data concerning them. It will make a handy reference for the test program recommended.

SUMMARY OF TESTING

The personality of a worker is subject to test. It indicates his potentials in

1. Job interest
2. General intelligence
3. Social intelligence
4. Leadership
5. Planning

6. Drive
7. Follow-through

His skill shows his adaptability to certain types of work. Performance consists of five further qualities:

1. Quality of work
2. Volume of work
3. Knowledge of job
4. Attendance
5. Safety on the job

Physical examinations show the presence of disease and defects.

Interests are those activities which a worker prefers, and are divided into

1. Clerical
2. Computational
3. Mechanical
4. Scientific
5. Sales
6. Social service
7. Literary
8. Artistic
9. Musical

A scoring system is set up, based on normal distribution. The grades decrease from 4 to 0.

4 Outstanding
3 Above average
2 Average
1 Below average
0 Unsatisfactory

QUESTIONS

1. What type of test considers drive as one element?
2. What does an arithmetic test measure?
3. Name the five elements covered by performance.
4. Name five qualities covered by an interest test.

5. Under what type of test is general appearance judged?

6. Who usually gives a performance test?

7. At what time is it recommended that skill tests be given?

8. A grade of 3 means what quality of work?

9. What single numeral grade is represented by a percentile of 32?

10. The 69 divider separates what two single numeral grades?

PROBLEMS

1. Determine the heights of about two dozen persons selected at random to the nearest inch. Make a graph with the horizontal axis of heights for each even inch. The vertical axis is the number of persons at each of these nearest even inch heights. If two persons are 65 inches tall, the vertical line will be two units high, etc. Plot the number of persons at each inch. Draw a smooth line, roughly connecting the top of each height group.

2. Use the curve of Problem 1. Divide the horizontal axis into five even parts. Now, what percentage of the people fall in each of the height groups?

3. How do the results of Problem 2 agree with the normal distribution curve. If agreement is poor, what factors have you overlooked in selecting your group?

4. Take the results of about two dozen examinations of any one kind. Plot these as in Problem 1, taking grades to the nearest even 5 per cent. How do these compare with normal distribution? Show this by a percentage comparison.

5. What single number grade would you assign to each of the examinations of Question 5?

CHAPTER III
SELECTED TESTS

A description of tests that have been selected as being most valuable forms the bulk of this chapter. The chapter will start with reference to one of the standard intelligence (I.Q.) tests. It is felt that this is but one of seven factors that go to make up personality.

Under each test will be found pertinent data necessary to give and interpret the test, along with such other data as will be useful in procuring the tests themselves. No questions from any test are given, nor are any score-sheet answers given. The reason for this, obviously, is that it would invalidate tests. Most tests are relatively inexpensive. Many of them have different mid-scores (equal to 2, exactly) for various groups. For example, if engineers are given a certain test for scientific aptitude, their mid-score will be much higher than for the liberal-arts college student. The one mid-score given here is for the average employable group. Thus, a grade of at least 2 should be expected in any tests of a skill in which the person is adept or well trained. Then, again, a person with a poor score in a skill may easily be satisfactory in other skills.

The latest scoring information should be secured from booklets accompanying tests when ordered. The publisher is the official supplier of information on his tests. Acknowledgment is made to those publishers, authors, or institutions offering permission for reference to their test, who kindly supplied additional data in many cases. As stated previously, there are other tests in these fields, some very good and others not so satisfactory.

PARTICULAR TESTS AND THEIR USES

The first test will be the Wonderlic Personnel Test. This is a standard intelligence test.

Personality Test—Intelligence

Full name of test: Personnel Test
Published by: E. F. Wonderlic, 750 Grove St., Glencoe, Ill.
Time of test: Exactly 12 minutes
Adapted to: All employees who are able to read
Tests for: General intelligence, which includes simple mathematics, vocabulary, logic, and reasoning

Grade	4	Divider	3	Divider	2	Divider	1	Divider	0
Score	34	31	27	23	20	16	14	11	9

The results of this test may well be combined with the results of the Personality Index described next. One of the columns of the results of the Personality Index is reserved for this use.

Personality Test—Behavior

Full name of test: Personality Index
Published by: La Rue Printing Company, 906 Baltimore, Kansas City 6, Mo.
Time of test: 18 minutes average (time not limited)
Adapted to: All employees who are able to read
Tests for: Indicated personality

Grade	Job interest	General intelligence	Social intelligence	Leadership	Planning	Drive	Follow-through
4	107	34	151	89	82	113	108
Divider	99	31	138	80	75	104	100
3	91	27	135	71	68	95	92
Divider	83	23	112	62	61	86	84
2	75	20	99	53	54	77	76
Divider	67	16	86	44	47	68	68
1	59	14	73	35	40	59	60
Divider	51	11	60	26	33	50	52
0	43	9	47	17	26	41	44

Each score unit of the Personality Index is plotted as a point in a column from the individual's test result. These points are connected with a continuous line. The line has peaks and valleys. The booklet accompanying this test shows how to interpret the results.

In brief, it is very desirable that the person have somewhat the same grade (2, for example) right across the sheet. This means that he is about of equal ability in each of the seven categories. Actually, the person may have some high and some low points. If the low points are in the 1 grade, it is necessary to investigate carefully the reason before hiring him. In some jobs a very high score in one or more columns is equally undesirable.

An engineer, for example, might have about 3 all the way across, except for social intelligence, where the 2 would be. This would be entirely satisfactory. A salesman might be 2 all the way across but have a 3 in social intelligence. This would be satisfactory.

Scores of 2 are not bad. They are normal and satisfactory for most jobs. Supervisors usually should average a high 2 or a 3 in almost everything. Top supervisors should be 3 or 4, with no lower points.

Reasons for high and low amounts in the columns are given in the chart at the top of page 29.

Clerical Test

Full name of test: O'Rourke Clerical Aptitude Test, Junior Grade

Published by: The Psychological Institute, P. O. Box 1117, Lake Alfred, Fla.

Time of test: 20 minutes

Adapted to: File clerks, stenographers, typists, stockmen, etc.

Tests for: Indicated clerical skill, which includes filing, accuracy of typing, sorting for selection, arithmetic

Grade.....	4	Divider	3	Divider	2	Divider	1	Divider	0
Score	150	143	130	115	99	81	62	52	47

Quality	Reason for high grade	Reason for low grade
Job interest.............	Absorbed in work	Interested in self and not in work
General intelligence....	Smart, quick	Poor reasoning, vocabulary, or arithmetic skill
Social intelligence......	Ability to get along well with others, considerate	Reactionary, rude, selfish
Leadership.............	Jovial, unworried, open-minded, desires to lead	Stubborn, fixed in ideas, worries often
Planning..............	Orderly, plans work rather than jumping	Disorganized thinking, jumps to conclusions
Drive.................	Energetic, takes the lead, drives himself to work	Drives others hard, or no energy, or gets discouraged easily
Follow-through........	Desire to finish well, pride in good work	Fails to finish, misses details

This test is timed to 20 minutes. The average person can hardly finish the test. The score is based on the number answered correctly. The test is well balanced and includes those skills required in clerical work. It does not require that the person should have filed before. Nevertheless, this should help him in learning which is advantageous if a trained person cannot be found.

Computational Test

Full name of test: Schorling-Clark-Potter Arithmetic Test

Published by: World Book Company, Yonkers-on-Hudson 5, New York

Time of test: 40 minutes

Adapted to: Bookkeepers and others making computations

Tests for: Indicated computational skill, including addition, subtraction, multiplication, division, fractions, decimals, and percentages

Grade.....	4	Divider	3	Divider	2	Divider	1	Divider	0
Score.....	96	89	81	74	67	59	51	43	35

This test is good, as it tests the person's computational ability thoroughly. It is somewhat lengthy. It does not

test ability on a computing machine. Such a test, however, can follow this one wherever it is necessary.

Arithmetic tests are relatively easy to construct, and shorter tests can be made and checked against the results from such a test as this.

Mechanical Test

Full name of test: Test of Mechanical Comprehension

Published by: The Psychological Corporation, 522 Fifth Ave., New York 18, N. Y.

Time of test: About 25 minutes average

Adapted to: Skilled mechanics, technical-school graduates in mechanics, youngsters entering mechanic apprenticeship, model-shop mechanics, etc.

Tests for: Indicated skill in simple problems of the usual branches of elementary physics

Grade.....	4	Divider	3	Divider	2	Divider	1	Divider	0
Score.....	53	50	46	42	37	32	27	22	16

This is one of the most interesting of the tests that have been devised. By a series of paired and single pictures, mechanical, light, electrical, and thermodynamic comparisons are shown. A simple choice is made, usually stating whether both are the same or which one is greater. Unlike many tests, this one usually entertains the person taking it and the time goes rapidly. The results are truly indicative of mechanical comprehension.

Scientific Test

Full name of test: Stanford Scientific Aptitude Test

Published by: Stanford University Press, Stanford University, Calif.

Time of test: About 1 hour 50 minutes average

Adapted to: Engineers, scientific workers, etc.

Tests for: Experimental bent, clarity of definitions, suspended versus snap judgment, reasoning, inconsistencies, fallacies, induction-deduction generalization, caution and thoroughness, treat-

ment of experimental data, and accuracy of interpretation and observation—all on scientific problems

Grade.....	4	Divider	3	Divider	2	Divider	1	Divider	0
Score.....	169	155	141	127	113	99	85	71	57

This test is original in its problems. Not only does it test ability to reason out scientific problems, but it makes the individual use the general methods of approaching scientific problems. It is adapted to those who must do engineering work of scientific caliber. The mechanical test may be used for junior engineering positions where the work does not require a highly scientific approach. Such engineers should be given the Stanford test before advancement to senior engineering positions.

Sales Test

Full name of test: How Perfect Is Your Sales Sense?
Published by: Dartnell Corp., 4660 Ravenswood Ave., Chicago 40, Ill.
Time of test: About 30 minutes average, no time limit
Adapted to: Salesmen of all types
Tests for: Knowledge of sales strategy and sales terms

Grade.....	4	Divider	3	Divider	2	Divider	1	Divider	0
Score.....	97	89	81	74	67	59	51	43	35

Some object to this test because the sales questions are applicable to certain types of sales. However, it will be found that almost three-quarters of the questions apply to almost any reasonable sales situation. Further, salesmen in any one type of selling should know about other types to the degree required in the test. The test is partially a knowledge test but is still classed as a skill test, in that an intelligent, well-read person may actually make a good score without previous sales experience. The test is most modern and does not include questions on stereotyped sales theory.

Social-service Test

No test has been found for this type of work. The best indications are those parts of the Personality Index which indicate high social intelligence, high job interest, and high follow-through ability. Tests may be constructed by using case studies met in the social-service job in question.

Literary Tests

Full name of test: Survey Test of Vocabulary

Published by: The Psychological Institute, P. O. Box 1117, Lake Alfred, Fla.

Time of test: Exactly 10 minutes

Adapted to: Literary workers (instruction-book writers, etc.), senior supervisors, journalists, etc.

Tests for: Extent of vocabulary, except for the fact that slow readers will show a poorer vocabulary than they actually possess

Grade	4	Divider	3	Divider	2	Divider	1	Divider	0
Score	88	78	69	61	54	48	42	36	31

This is a straight vocabulary test. It gives an excellent index to the probable vocabulary. While it indicates literary ability, it in no way tests knowledge of literature. Another test that can and should be combined with this follows. Both tests together are important for literary workers. Both are also important for senior supervisors, who must have the ability to read fast in order to keep abreast of their work and of literature in their field. When a limitation is encountered, "30 Days to a More Powerful Vocabulary," published by W. Funk, Inc., 354 Fourth Ave., New York, N. Y., is an excellent book to help increase vocabulary.

Full name of test: Michigan Speed of Reading Test

Published by: The Psychological Corporation, 522 Fifth Ave., New York, 18, N. Y.

Time of test: Exactly 7 minutes

Adapted for: Literary workers, senior supervisors, journalists, etc.

Tests for: Speed of reading

Grade.....	4	Divider	3	Divider	2	Divider	1	Divider	0
Score.....	70	65	60	55	50	45	40	35	30

If the speed of reading is slow, this will usually have been shown in the vocabulary test preceding this one, by the fact that the person being tested simply did not have time to finish the test. It should be firmly impressed on those who take the speed-of-reading test that a very high rate of reading speed is necessary. The speed is so important that even taking time out to light a cigarette must be avoided. This is usually not serious in most tests. Some prefer to estimate reading speed from the amount of the vocabulary test finished. Results from this method are not so accurate as those obtained by giving the reading test, which was deliberately designed to test reading speed.

Incidentally, there is an excellent book which, if followed, will aid anyone to increase reading speed. It is "Toward Proficient Reading," by J. A. Hamilton, published by Saunders Press, Claremont, Calif. Its methods are simple and positive.

Artistic Test

Full name of test: The Meier Art Tests, 1, Art Judgment
Published by: Bureau of Educational Research and Service, University of Iowa, Iowa City, Iowa.
Time of test: Unhurried—about 40 minutes average
Adapted to: Artists, designers, etc.
Tests for: Judgment of artistic value

Grade.....	4	Divider	3	Divider	2	Divider	1	Divider	0
Score.....	109	106	103	99	95	91	86	81	75

Many of those taking the test will probably feel that the scoring is severe. The actual scores in art schools are far higher than the ones above. The test is very

interesting. It consists of comparing 100 like pairs of pictures. Each pair differs in one detail. The person being tested is required to say which of the two pictures is the more artistic.

Musical Test

Full name of test: Kwalwasser-Dykema Music Test

Published by: Carl Fischer, Inc., Cooper Square, New York 3, N. Y., or RCA Victor Company, Camden, N. J.

Time of test: About 1 hour or more

Adapted to: Musicians or potential musicians

Tests for: Indicated musical ability, which includes tone, quality, intensity, movement, time, rhythm, pitch, and melodic taste. Two additional test involve some acquaintance with music notation. These may be omitted for nonreaders of music

Grade	4	Divider	3	Divider	2	Divider	1	Divider	0
Score (full test)	208	202	193	184	176	169	162	154	150
Score (reading omitted)	166	163	157	150	145	141	137	131	129

This test requires that the listener compare musical tones, timing, intervals, etc. It requires a reasonably good phonograph and the five double-faced 10-inch records supplied with the test. Music and art are actually related to many industrial jobs today. This test quickly reveals much valuable information regarding music ability. The fact that the industry is not familiar generally with the arts is an especially good reason to give such tests, to judge those being selected for such jobs.

Interest Test

Full name of test: Kuder Preference Record

Published by: Science Research Associates, 228 South Wabash Ave., Chicago 4, Ill.

Time of test: About 45 minutes

Adapted to: Any person, particularly if he is not adjusted to his job

Tests for: Indicated interest in mechanical, computational, scientific, persuasive, artistic, literary, musical, social-service, and clerical work

For Men

Grade	Me-chan-ical	Com-puta-tional	Scien-tific	Per-sua-sive	Artis-tic	Liter-ary	Musi-cal	Social serv-ice	Cler-ical
4	109	56	96	97	81	78	42	92	80
Divider	104	51	91	89	71	70	36	84	73
3	97	45	84	80	61	60	29	76	66
Divider	89	39	77	73	53	52	23	68	59
2	80	34	68	66	47	46	17	61	53
Divider	69	29	60	59	40	40	12	54	47
1	57	25	52	52	34	34	8	47	42
Divider	45	21	44	46	27	28	5	39	36
0	36	18	38	41	21	23	3	32	31

For Women

Grade	Me-chan-ical	Com-puta-tional	Scien-tific	Per-sua-sive	Artis-tic	Liter-ary	Musi-cal	Social serv-ice	Cler-ical
4	83	50	88	91	88	80	42	112	92
Divider	74	44	78	86	78	72	38	106	87
3	64	38	68	78	68	63	33	97	80
Divider	56	33	59	72	59	56	28	88	72
2	48	28	51	65	50	48	23	79	63
Divider	41	23	44	59	42	41	18	71	55
1	35	19	38	52	36	34	13	62	47
Divider	29	15	31	46	30	29	10	54	39
0	23	12	26	41	25	25	7	46	33

The Kuder test is composed of 168 groups of three questions each, which involve a choice of the most desirable type of activity. One of the three must be selected as the most desirable and one as the least desirable. By an ingenious method of quick scoring, the table above shows the high and low points of interest. If there is but one really high point, the preference for a certain type of

work will be obvious. If two or more are high, this combination will usually point to one or more jobs in an industry. Sometimes three elements are high. Again, it is a matter of analyzing known jobs to see which ones satisfy all three interests. A table of occupations is supplied with the tests, which helps when one or two high scores are shown.

When this test is used in guidance work—for which it is especially valuable—it is not to be assumed that all three choices necessarily represent high skill in the person being tested. To confirm this interest, one or more of the aforementioned skill tests in those subjects should be given.

The term "persuasive" has been referred to as "sales" in the test descriptions elsewhere in this book. It involves convincing people, as well as selling, and is a desirable interest for any good supervisor.

The excellent classification of interests used in this test were used in the test classifications in the previous chapter. The order has been rearranged in using these classifications. The Kuder descriptive literature states that such things as agriculture and personal-service occupations are not covered. For industrial purposes the classifications are excellent and will prove to be entirely adequate.

With an intelligent person, the continued use of this test will prove of tremendous aid to creating a good counselor rapidly.

SELECTING TESTS

The ideal theoretical application of these tests is to give the whole battery of tests to each applicant, plus any written and oral tests made up by a company for individual jobs. This is ridiculous for practical purposes and far too expensive for the result gained.

Instead, it is recommended that the Personnel Test and Personality Index be given immediately to all applicants who can read. After this, the indicated skill test

that most closely relates to the job being sought should be given.

Several examples will be shown to make the point clear.

FILE CLERK

Test	Time
Personnel Test	12 minutes
Personality Index	18 minutes
Interview	15 minutes
O'Rourke Clerical	20 minutes
Total	1 hour 5 minutes

ACCOUNTING-COMPUTING

Test	Time
Personnel Test	12 minutes
Personality Index	18 minutes
Interview	15 minutes
S.C.P. arithmetic	20 minutes
Computer operation	10 minutes
Total	1 hour 15 minutes

SALESMAN

Test	Time
Personnel Test	12 minutes
Personality Index	18 minutes
Interview	15 minutes
Babson Sales	30 minutes
Interview (by sales)	30 minutes
Total	1 hour 45 minutes

ENGINEER (MECHANICAL, ELECTRICAL, ETC.)

Test	Time
Personnel Test	12 minutes
Personality Index	18 minutes
Interview (general)	15 minutes
Stanford Scientific Achiev	1 hour 50 minutes
Interview (two-technical)	50 minutes
Specific examination—written	50 minutes
Total	4 hours 15 minutes

In many cases, persons are hired for skilled jobs. These must be interviewed by experts in their fields. The personnel department is actually capable of carrying out a part of that interview and should do so. Often this responsibility is not carried through, and the supervisor is allowed to carry the whole interview.

PROFILE CARDS

Personality tests should be compared by means of a card that shows the results of the interview, test, training, and work-review grades. Such cards will be shown in later chapters. It is by means of such records that the value of training and of tests can be evaluated. Many other by-products result from these comparisons, as will be shown.

ADVANCEMENT TESTS

When a person desires advancement to another type of job or to a supervisory position, it is necessary to give certain tests. They are these:

1. Personality Index (unless given in last 6 months)
2. Vocabulary and reading speed
3. Any skill test directly applicable and not given before.

Actually, if the tests have been previously given to the worker who is advancing to a supervisor's position, little need be done other than to review the test results, which may indicate that he is barely capable of the work he has been doing. If this is borne out by his work record, there is no use in considering the matter further. If the tests show him to be at least equal to the test grade set for supervisory work, there is little need in bothering with testing further and the worker should be advanced, provided that the work record agrees.

SUMMARY OF SELECTED TESTS

The following table shows the relationship between tests. The interview should cover the pertinent subjects shown that are verified by test. The person's interests can be

found by interview. They should generally agree with interests known to refer to the job.

Personality	*Indicated Personality*
Job interest	Personality Index
General intelligence	Wonderlic Personnel
Social intelligence	Personality Index
Leadership	Personality Index
Planning	Personality Index
Drive	Personality Index
Follow-through	Personality Index

Skill	*Indicated Skill*
Clerical	O'Rourke Clerical Test
Computational	S.C.P. Arithmetic Test
Mechanical	Bennett Mechanical Comprehension Test
Scientific	Stanford Scientific Achievement Test
Sales	Babson Sales Test
Social service	None
Literary	O'Rourke Vocabulary Test
	Michigan Speed of Reading Test
Artistic	Meier Art Judgment Test
Musical	Kwalwasser-Dykema Test

Performance	*Performance or Actual Knowledge*
Quality of work	By references or operating test
Volume of work	By references or test speed
Knowledge of job	Written examination or operating test
Attendance	By references
Safety	By references or injuries

Physical Condition	*Indicated Physical Condition*
General appearance	By observation
Health	Physical examination

Interest	*Indicated Interest*
Same list as for Skill	Kuder Preference Record

QUESTIONS

1. What are two reasons for a high grade in follow-through in the Personality Index test?

2. What is the time requirement of the Clerical test?

3. Are computational tests more difficult or easier to construct than others?

4. The raw score in a mechanical test was 35. What was the grade?

5. Is the Scientific test usually given to very junior engineering personnel? If not, what is used?

6. Is the Sales test adapted to one particular sales group? If so, to what group?

7. Do either of the literary tests apply to any group except writers? If so, to what other group?

8. Where might the Artistic test be used in some company that you know?

9. What is the main use of the Kuder test?

10. Pick a group of tests, not mentioned in this chapter under the selection of tests, for some job you know. What approximate time would be required, including interview?

PROBLEMS

1. Describe a person who made the following scores in the Personality tests. Scores are given in the same order as the parts of the test are shown in this chapter. 75-16-151-44-68-79-61.

2. Name four jobs in which low indications of social intelligence might be acceptable. Other qualities are average or above.

3. Name four jobs in which low leadership might be satisfactory with other portions of the Personality Index indicating above normal.

4. The average grades of a Personality Index were 2-3-3-2-3-4-1. What would be the over-all average grade?

5. A woman received scores of 35-39-46-87-36-34-8-70-87 on the Kuder test. For what job might she be well adapted by her interests?

CHAPTER IV
TRAINING PROGRAMS

The purpose of training is to show someone how to do something new or how to do something in a better way. Industrial training is not concerned with broad education. It is concerned primarily with very highly specialized, specific, and detailed training. This point is so important that two examples will be given to make clear the real difference.

The training of stenographers is a good example. It is assumed that the worker has studied in a business school and can type and take shorthand with fair proficiency. Suppose that she is hired by a manufacturer of chemical products.

BROAD EDUCATION

Under a broad educational program, the girl would go to work. After becoming acquainted with her work, she would take the following courses:

1. English
2. History of industry
3. Chemistry
4. French

Although this is all very well, it is *not* industrial training. Such subjects as those above may be offered as supplementary subjects, but they are related only remotely to industrial training.

INDUSTRIAL TRAINING

In a proper industrial-training program, the worker is given subjects that will allow him to produce good work *as soon as possible*. In the first chapter it was pointed

out that he must be taught those things which he can otherwise learn only by interrupting fellow workers or the supervisor on the job.

There are two choices: (1) to keep the stenographer (for example) in training until she is ready to work; (2) to have training and work start at the same time. Training for 8 hours a day does not accomplish the result much more quickly than a few hours of training per day with regular work for the rest of the day. There are two things that the girl must learn:

1. Generally about her company (Introductory 1)
2. Directly about her work (Stenography 1)

A program for doing this might well consist of the following:

Time	Occupation
First day:	
8 to 10 A.M.	Introductory 1 (course)
10 to 11	Introduction to supervisor, selected fellow workers, and her immediate surroundings
11 to 12	Work
1 to 3 P.M.	Stenography 1 (course)
3 to 5	Work
Second to fifth day, inclusive:	
8 to 10 A.M.	Introductory 1 (including trip through plant)
10 to 12	Work
1 to 3 P.M.	Stenography 1
3 to 5	Work

Thus, in a 5-day period, the girl has spent 11 hours learning about her company, including its policies, its products, and, especially, its employee benefits. She has also spent 10 hours learning the special forms and procedures.

Here is the important thing about these courses. She has not merely listened. She has been questioned, to see that she understands thoroughly what she has been told. Every form and procedure has been actually practiced— not once, not twice, but until she has it firmly in her grasp.

The example for the stenographer follows the same general pattern as for other workers, but not necessarily with the same hours or schedule. Obviously, a mechanic will benefit equally from the Introductory 1. His hours of Mechanical 1 or Assembly 1, or whatever is planned for him, may have to be given before he turns out any product. This may still allow a spread of 5 days for Introductory 1. The other work may be finished in the remainder of the first day. It may be spread over 2 weeks of intensive training.

ADVANCED INDUSTRIAL TRAINING

A later chapter, on training methods, will treat giving training in detail for certain broad classes of workers.

One fact has been established: *The training will be narrow, and every bit will be aimed at making a good worker with good morale.*

The second fact has been indirectly hinted at: *The worker will get advanced, introductory, and specific training later.*

This is the key to follow-through. As the worker progresses in the company, he will become acquainted with more of the company's workings and will be trained for such things as supervision. So he may get the following courses:

Introductory 2 (and 3 and maybe 4)
Mechanical 2 (and 3 and maybe 4 and 5)
Supervisory 1 (and 2 and maybe 3)

If the worker is not capable of any advancement, his training may never reach any of these advanced stages.

SECURING INSTRUCTORS

There is no doubt that instructors can be hired for the purpose. When they are, there is usually trouble in industrial training. The reason for this is that the working

foreman soon finds that his workers are not trained well enough and that he must retrain them *by his own methods.* His methods, however, may be something that he has decided are best for his unit. Another similar unit is operated differently to suit another man. The instructor is in a bad spot. He cannot train men for similar jobs, for those properly alike have become widely different under the various supervisors.

Also, the professional instructor has a hard time keeping up with the routine changes of the business. He works all day at instructing and loses sight of the methods on the job. Finally, one fine day, the number of new men being trained drops off. The instructor either leaves or goes for good into another department. That day marks the beginning of the end of the training program.

Most industries do not take many new men into like jobs at a rapid rate. This means that training classes are small. If one instructor covers the subjects of ten of these diversified jobs, his knowledge is not very good in a specific job. So again the training is not very good. His pay is low. As an instructor, he is not a supervisor, as such. So, the situation brings out the following objections:

1. The instructor has to suit several masters.

2. He will have little work when turnover slows down.

3. He has trouble in keeping abreast of all subjects because of the changing methods.

4. His pay is not high, for his work is nonproductive and varies in amount.

What can be done to prevent this recurring problem?

Supervisors as Instructors.—The answer to this problem is to have the supervisor spend a certain amount of his time as an instructor. *This time must be devoted entirely and continuously to training.* The period may be for 2 hours a day for a week or 10 days a month. When times are slack, it will be less. Under high turnover conditions it may be more. Now, what has happened to the four objections above? The answers are as follows:

1. He trains his own men or those in like jobs. (His fellow supervisor trains some for him too.)

2. When little initial training is necessary, he devotes more of his time to advanced training (taking some himself).

3. He can keep abreast of the changes—they are another and most important part of his job.

4. His pay is good. He *is* a supervisor.

This is all very well, but how about letting a man teach who is *not* a trained instructor? True, he is not a professional teacher. He is, however, a practical man who knows just how much his men *must* know. In order to acquaint himself with the principles of teaching, he must *successfully* complete a course (Instructor 1) before he is allowed to instruct. Such a course supplies him with a number of things that he needs as a supervisor.

The net result of taking an instructor course and of instructing himself is this:

1. He learns how to speak to a group with assurance.

2. He learns to plan, as he must plan before instructing.

3. He learns how to explain things better. This is useful with his workers in daily routine changes in processes and methods. It is useful in explaining suggested improvements to his superiors.

4. His job becomes better standardized. Everything in which he instructs is written in outline and must be approved.

5. He has better understanding and can produce greater uniformity with similar departments; therefore, there is better standardization.

6. He learns much more about the work that his workers are performing. Unless he instructs in the job, he may not realize its complications.

7. He will help to improve work methods when he, himself, has found them difficult to teach.

The benefits are not small. None of this will work, however, unless there is a central agency that controls

the whole training program. In the next chapter such an organization will be described.

One important conclusion can be reached. If the benefits that were listed above result, the supervisor is certainly not wasting time in instructing. In fact, it means that this method is much more economical than hiring a number of trained, full-time instructors.

WHERE TO TRAIN

There are two theories of training. They might be called the "little red schoolhouse" and "training on the job."

The first involves a central school with many classrooms, not necessarily in the building with the production departments. The second involves no schoolrooms at all—merely an idle desk or machine.

In the opinion of the usual supervisor, the first is theoretical and the second is practical.

Instead of going completely overboard in either direction, it is much better to combine the good features of both. Where films are to be used, or where there must be discussion, it is best to have a room as near the production space as possible. Where there is to be practice, the factory facilities should be used, by all means—with one exception. This exception is for training the employee who comes in contact with the public. Here the worker must first practice in a suitably equipped (not bare) room. The chapters on training methods will treat this in greater detail.

Some plants, however, extend over large areas. Parts of these plants may even be spread over many states or countries. Such plants will be called "multiple plants."

Multiple-plant Training.—It is important to have the same central agency for multiple-plant training. At each plant, or geographical group of plants, there must be a coordinator, to see that training is taking place and that

it is being given in a standard manner. The coordinator will be discussed in the next chapter.

A very good example of a multiple plant is an air line. A domestic air line may be spread over a distance of some 3,000 miles. As a rule, such a line is split into divisions, or regions. Each region controls a certain number of stations. At each station will be found similar groups in varying numbers doing the same job. In a business of this sort it is very important that the cargo from one station shall be handled in a standard manner at the next. It is just as important that parts made at a branch factory shall fit when they are assembled at the main factory.

One category of employee will illustrate the point. A passenger agent is one who makes out tickets. He originates forms so that the next station en route knows just what is on the plane before its arrival there. If the passenger agents at one station make out a form somewhat differently from the way it is made at another, there are delays and mishandlings.

At the headquarters station of the region there might be twenty-five passenger agents. At other stations there might be from three to thirty of the same type of employee. If the air line had fifteen stations per region and four regions, there would be sixty stations at which training was needed.

It would be possible to send each of the passenger agents to a central air-line school. However, there would not be enough supervisors at the central base to handle such training. Furthermore, none of the outlying supervisors would be gaining the benefits from their participation in the training.

In normal times the solution to the difficulty is to do the training at the regional-headquarters stations. When turnover is higher, the training might be extended to other stations within each region until the peak is passed. When training is slack, each region could act as the training center for 1 month, all new employees being sent to that

place. This would have the advantage of knitting the regions more closely together.

It is also possible to run two concurrent classes at a station where too many must be trained in a single class. This method has been in operation with success in one air line.

The supervisors at the regional-headquarters stations should be more carefully picked, as they will be doing training. This should be a logical avenue of advancement for supervisors who someday will be regional supervisors.

The supervisor must realize that *instructing leads to advancement*.

TRAINING INSTRUCTORS

When a worker advances to a supervisory position, it is a part of his training to instruct. He should be trained for this purpose by another supervisor and in a standard method. Once he has mastered the principles of instruction, he will be in a position to learn to instruct in one or more subjects.

If he has recently completed a specific course, he needs to do no more than go over the outline carefully and start instructing when the time comes. If he has not had the course, he must attend one that is being given. He may actually assist with the instruction. He is then qualified to conduct the next session himself.

The coordinator in the region must work with each new instructor, to be sure that he is teaching in the standard method and doing a satisfactory job. The supervisor must realize that his instruction will be monitored for his own good and that of the company.

INTRODUCTION OF NEW COURSES

When a new course is to be initiated, it is necessary for the training department to assign one or more persons to assemble material for the course. This material is arranged with a good, detailed outline and the necessary visual aids. The person responsible for the construction of the

course then presents this course within the training department to an audience composed of training specialists and supervisors who are fully familiar with the material. The material is then carefully analyzed, and many suggestions for improvement will, and should, be made. The course is returned for improvement with either a recommendation for another presentation or for minor improvement and issuance.

The course is then completed with all written material and visual aids in sufficient quantity for the one or more locations in which it will be used.

In the case of a multiple plant, the next step is to call in the coordinators from the field and present to them one or more new courses to take back to their respective regions or plants. Immediately upon their return, the coordinators will present the course to the supervisors who will instruct in it, filling up the remainder of the group with actual trainees.

Thus is a new course launched. Thereafter, the new instructor learns from an older one, whom he will eventually replace. The coordinator maintains the standard of instruction.

Dilution.—It is obvious that some amount of dilution exists in this method. It is the function of the coordinator to prevent the quality standard from slipping. The coordinator is responsible for making the various small changes in each course that are finally issued by the training department. He is also responsible for suggesting any changes that must be adopted as a standard before they can be used.

Specifically, the man who first makes up the course passes it to the coordinator. He, in turn, passes it directly to instructors. Thus, the instructor receives the course secondhand, or with one dilution. The man making up the course must check the field application after a number of months, to see the result of his work. In this way he keeps in touch with his product.

CHARGES FOR TRAINING

Training can be divided into three parts:

1. Training for the job assigned
2. Training for a future job
3. Training for broader education

Training for a job to which a person is assigned should definitely be at the expense of the company. In the first chapter it was shown that this cost is less than what will be saved.

Training for a future job to which a person has not been assigned is another matter. Some companies feel that this should be offered to any worker who wants it. There is a great disadvantage in this. Many workers will take the course because of a casual interest or to get out of work. This practice will spoil it for the others. Perhaps the best solution is to offer these courses during off hours. The interested employee thus has some stake in the undertaking, as he is devoting his own time to it.

Training for broader education consists of such courses as languages, public speaking, mathematics, and chemistry. When these skills are not required of the employee, they may make him more valuable; although they are not industrial-training subjects in themselves. The training department must offer some of these by one of the following methods:

1. Arrangements with local schools or colleges
2. Arrangements with individuals, either within or outside the company

In every case there will be some abnormal expense to be borne. In case 1, above, it is frequently found that special rates will be offered to groups for certain courses. This actual expense should be borne by the worker.

In case 2, a certain amount should be paid to the instructor. These amounts vary from about $2 per hour to $5

per hour for either an employee-instructor or an outside individual. Sometimes a fixed amount is charged for a course.

In any event, the training division should be just as critical of these courses as they would be of their own. If the course is not satisfactory, it should not be recommended. The worker taking the course should pay his share, which will often depend on the number in the class. No refunds should ever be made without a valid excuse. In some cases the company will completely or partially reimburse the worker with a high grade. In other cases, the complete cost is refunded upon satisfactory completion. This is a policy matter dependent upon the individual company.

TRAINING PUBLICITY

Certificates or small cards, of wallet size, are a great advertisement for training. When a worker or a supervisor finishes a course satisfactorily, he should promptly receive a card or a certificate, or both. On it should be indicated this course and any others that he has completed. He will show this card to other persons, as it represents a real accomplishment on his part. When courses have been passed with exceptionally high grades, this fact should be stated. Otherwise, no grade should appear.

Similar certificates may be issued (with a card, too) to those who have qualified as instructors. Distinction may be made between Instructor, Senior Instructor, Master Instructor, etc. Different-colored cards will add to the prestige and serve to distinguish one certificate or card from another.

In some companies there may be a student pay scale for trainees. If this is so, the trainee should be informed of his pay raise or advancement at the same time that he gets his certificate.

Some industries publish special supervisors' bulletins, which carry on the training after the initial course is

finished. When it is well done, this is a tremendous training aid.

A training booklet that will answer all his questions on training should be issued to each supervisor. It should list courses, length of time for each course, availability to class of worker, etc. This bulletin should be printed when the training department becomes stabilized and reprinted when there have been sufficient changes to make this necessary.

TRAINING-PROGRAM SUMMARY

To summarize, the actual instruction work is turned over to supervisors, who devote a certain amount of their time to training. This time results in a much better product in the men who will work for them or for others in their same position. Their ability to instruct is definitely a help in their promotion and should be a strong factor to be considered in their advancement.

Training courses are compiled by a training department. They are introduced to instructors by a training coordinator. The coordinator maintains the quality control and helps the supervisor in his instruction.

QUESTIONS

1. What is the chief aim of industrial training?

2. Within what group are the best industrial instructors found?

3. Name two benefits that those who instruct receive.

4. What is a multiple plant?

5. Who assembles material for new courses?

6. If material is passed through too many hands to the instructor, the material may suffer because of what one reason?

7. Should workers be charged for an "introductory" course?

8. Name two methods of securing training publicity.

9. Give two reasons why certain courses should be paid for by workers.

10. What happens to the instructor-supervisor when training drops off?

PROBLEMS

1. Rearrange the timetable for stenographer training at the beginning of this chapter in a manner that you would prefer.

2. What hour schedule would you select for a supervisor's course that required 10 hours total time? Show a timetable by days.

3. What are the benefits of arranging a course in 2-hour sessions over 1-hour sessions, for the same total course time?

4. Give five companies known to you that would have to employ multiple-plant training, rather than central training.

5. Name five companies known to you where central training is best accomplished, even though the plant may cover part of a state or a city.

CHAPTER V
TRAINING-DEPARTMENT
ORGANIZATION

The conception of industrial training was set forth in the previous chapter. It assumes that instructors will be of supervisory rank. The training department will not consist of a principal and a number of teachers. It will consist of an organization devoted to preparation of material for these supervisor-instructors. The supervisor has neither the time nor the experience to build a first-rate course.

Supervisors will be brought into the initial planning of courses in which they are interested. They should be consulted constantly as a course is being built, for it must satisfy them in the long run.

TOP ORGANIZATION

There are three major divisions of a training department. These are shown in the organization chart:

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            ┌──────────────────────────┐
            │   TRAINING DEPARTMENT    │
            └──────────────────────────┘
                         │
     ┌───────────────────┼───────────────────┐
┌──────────┐       ┌──────────┐        ┌──────────────┐
│ RESEARCH │       │ STANDARDS│        │ COORDINATION │
│ DIVISION │       │ DIVISION │        │  DIVISION    │
└──────────┘       └──────────┘        └──────────────┘
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In brief, the research division carries on studies for the making of tests, the establishment of basic training methods, and the continued analysis of training effectiveness.

The standards division constructs the courses by those methods agreed upon with research. They also inspect

the actual training, to be sure that it is up to the standard agreed upon.

The coordination division is a group occupied with direct service to the supervisor who is instructing. It schedules classes and instructors. It supplies facilities for training.

RESEARCH DIVISION

The research division's responsibilities consist of the three main parts of testing, methods, and analysis. Its organization is shown in the division chart:

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                    ┌─────────────────────┐
                    │  RESEARCH DIVISION  │
                    └─────────────────────┘
          ┌───────────────────┼───────────────────┐
   ┌──────────────┐    ┌──────────────┐    ┌──────────────┐
   │   TESTING    │    │   METHODS    │    │   ANALYSIS   │
   │   SECTION    │    │   SECTION    │    │   SECTION    │
   └──────────────┘    └──────────────┘    └──────────────┘
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In a small company it is entirely possible that one man might carry on all functions. A larger company will have one person in charge of each division with one or more persons in each section. Regardless of the number of persons involved, the functions are all necessary.

Throughout the training-division organization, it will be seen that usually three persons report to one above them. This would not be required in a school, where a considerably greater number of teachers could report to a principal or to a department head. The reason for this is that industrial work is of a highly specialized nature. The administrative details should not be so great that a division head cannot devote considerable time to his immediate subordinates. Wherever too great a number must report to one person, it is quite possible that administrative details will take far too much time. Usually the training division includes a small number—about one person to every 200 employees. Few others in the company will take an active interest in training. So, each training supervisor must make doubly
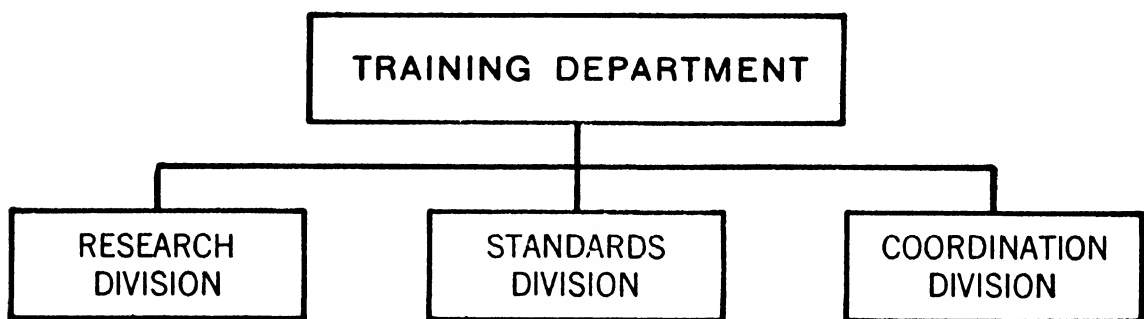
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            └─────────────────────────────┘
      ┌──────────────┼──────────────┐
┌───────────┐  ┌───────────┐  ┌──────────────┐
│  RESEARCH │  │ STANDARDS │  │ COORDINATION │
│  DIVISION │  │  DIVISION │  │   DIVISION   │
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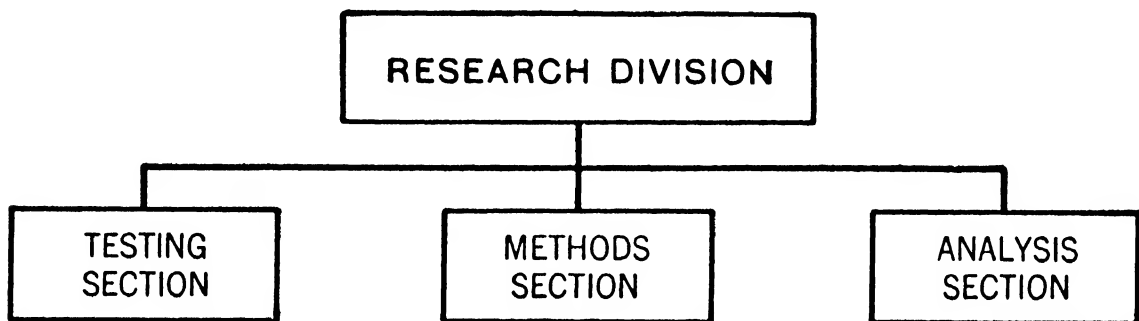
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          ┌─────────────────────┐
          │  RESEARCH DIVISION  │
          └─────────────────────┘
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     ┌──────────────┼──────────────┐
┌─────────┐   ┌─────────┐   ┌─────────┐
│ TESTING │   │ METHODS │   │ ANALYSIS│
│ SECTION │   │ SECTION │   │ SECTION │
└─────────┘   └─────────┘   └─────────┘
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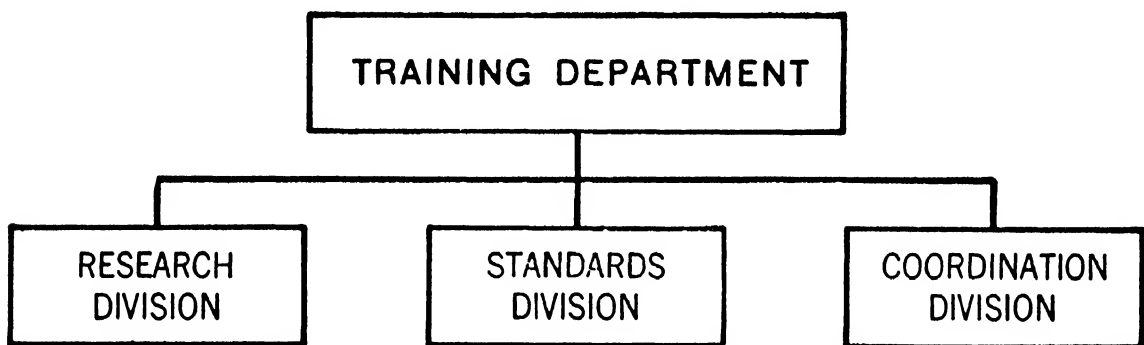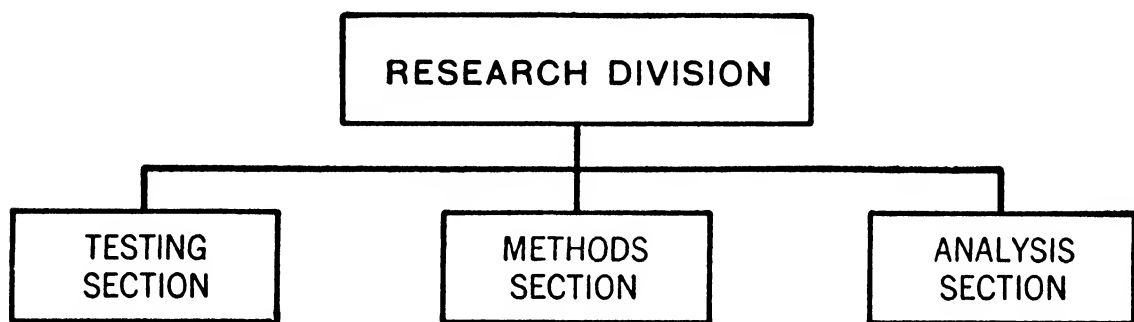
sure that he contributes heavily to the work that is being done under his direction.

Testing Section.—The testing section is responsible for three main functions, which may be shown best in its organization table. Again, the number of persons involved depends upon the size of the company.

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                    ┌─────────────────────┐
                    │   TESTING SECTION   │
                    └─────────────────────┘
          ┌────────────────────┼────────────────────┐
┌──────────────┐     ┌──────────────────┐     ┌──────────────┐
│     TEST     │     │       TEST       │     │  COUNSELOR   │
│ CONSTRUCTION │     │  ADMINISTRATION  │     │    GROUP     │
│    GROUP     │     │      GROUP       │     │              │
└──────────────┘     └──────────────────┘     └──────────────┘
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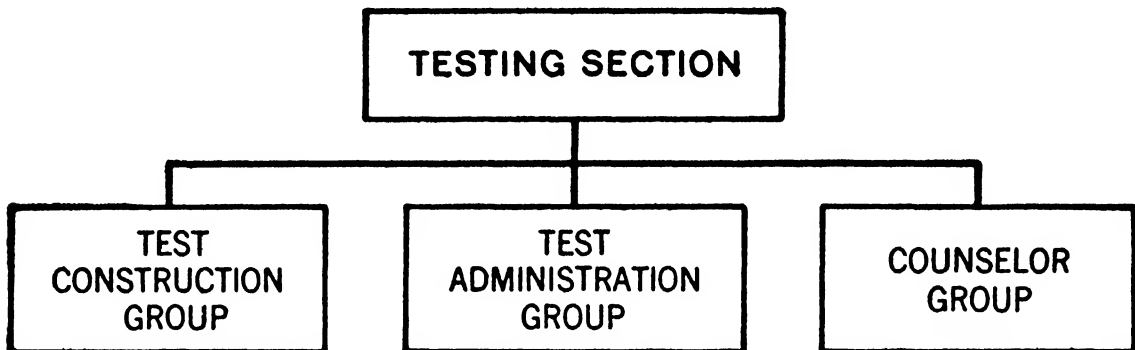
It has been explained previously that testing sometimes falls into the discard because of misinterpretation. The testing section covers all phases of testing. Certain parts of it may be delegated to other departments in the company, as will be shown in the individual descriptions of the functions of each group.

Test-construction Group.—This group may decide that the tests available on the market are not directly aimed at the needs of the company. In the chapter on testing programs, it was explained that tests aimed at individual jobs of a specialized nature cannot be secured. Various special tests may easily be constructed. It is the responsibility of the group to examine continually the results of testing and to compare these results with the actual performance of the person on the job.

When standard tests are used, certain limits will be recognized, above or between which will be found the desirable workers. It takes a long time to establish these points so that satisfactory workers can be discovered. It is also essential that the test group shall find out how far these standards can be safely lowered when workers are scarce.

It is not necessary to have a trained psychologist to head such a section. It is essential that the person

occupying the post shall be versed in those principles of psychology which are generally recognized as well established. These are not great in number. Perhaps "We Call It Human Nature," by Paul Grabbe, will fill the initial gap for one not familiar with this field. In it is included a short bibliography, which will extend the reading to a point where the person interested may come to his own conclusions about what has been well established and what has not. This field, which is an interesting one, is in the early stages of tremendous development. Certainly, human behavior is complicated. Much testing is for fact rather than behavior.

Test-administration Group.—When the training division is located in a single plant near the employment offices, the actual administration of tests may be made by the training division. Where this is not possible, it may be that the tests will be turned over to the interviewers or to someone in the employment office. It is essential that the persons giving the tests shall understand them and their interpretation.

Tests that require a long process of scoring are not very useful for hiring new workers. It is absolutely essential that tests should be scored within minutes after administration. This is easily possible with all tests that have been selected. In no case should they be scored in the presence of the person taking the test. He will usually feel that he has done badly when he sees that many answers are wrong. Although his score may be a high one, it will be impossible to convince him after he has seen that he made many mistakes.

In any event, the test-administration group is charged with the over-all responsibility of giving the tests, scoring them rapidly, and then promptly turning the results over to someone else.

Counselor Group.—There are a number of workers and supervisors in a company who are apparently good men. Some of these may not be satisfied. Some may wish to

transfer to another department. Sometimes a supervisor may want to move a man when he is not doing very well. Good men may be lost to the company if something is not done about it, or poor men may be retained by shifting them around. In order to solve these problems, it is often economical to have a counselor.

The counselor is a most difficult person to find. He (or she) must possess a keen insight into human nature. He must be able to divorce himself completely from the emotional view of the situation. He must, above all else, be sought by worker and supervisor. He must never interfere with a supervisor. Lastly, he must gain a reputation for respecting confidences implicitly.

Sometimes the company physician will undertake this work. This is of great advantage, in that the physical aspects of the situation will be taken into account.

The results of counseling are three:

1. A recommendation that the person should be transferred to more suitable work.

2. A recommendation that the person should resign. In this case it may be necessary to force the issue if the person does not elect to "save face" by resignation.

3. In some cases the counselor will advise that the person shall be allowed to remake himself. The high degree of failure in this respect means, even more, that the counselor must be well qualified to recognize the exceptional case.

The counselor may be in the medical, the training, the industrial-relations, or the executive department. If he is not in the training department, it is his responsibility to know of the testing program and to have available all information, prior to discussing the situation with the worker.

The counselor should interview all workers or supervisors leaving the company. They may be leaving of their own free will or they may have been discharged. Often this duty is left to the personnel-department interviewers.

The work is so important to the counselor that he should actually do it himself or be intimately familiar with the detailed results of exit interviews.

Methods Section.—The methods section develops the methods and tools by which proper training can be done. It does not develop the courses as such. Its organization is shown on its chart.

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                    ┌─────────────────────┐
                    │   METHODS SECTION   │
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                               │
        ┌──────────────────────┼──────────────────────┐
┌───────────────┐      ┌───────────────┐      ┌───────────────┐
│  INSTRUCTION  │      │  PUBLICATIONS │      │   VISUAL AID  │
│ METHODS GROUP │      │     GROUP     │      │     GROUP     │
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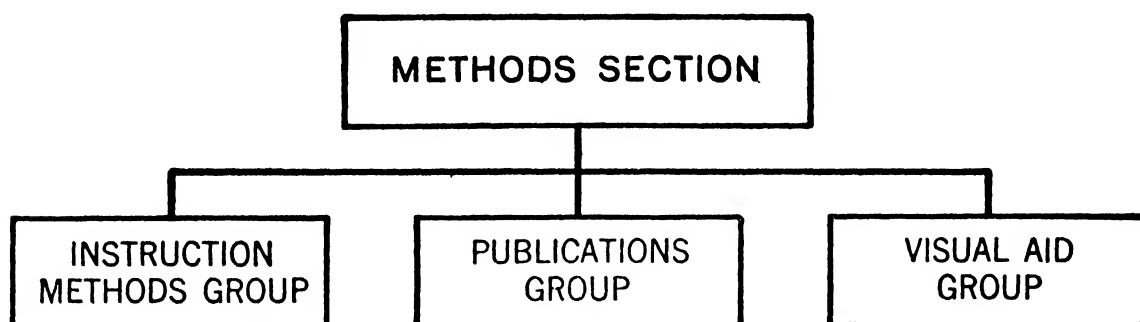
The three parts of this section will be described in detail.

Instruction-methods Group.—Each type of subject has special means by which it may be taught more quickly and more thoroughly than by any others. Here, again, is a departure from the standard thinking involving a lecture. The group may decide that the conference-table method should supplant any standard schoolroom arrangement. It may decide what types of things should be taught in the shop. A considerable discussion of this follows in the chapters on training methods. A group (or a person) should continually review the methods used by the company. It should devise new training methods and keep abreast of the methods of other companies.

Publications Group.—The number of publications of even a small training division is great. One or more persons should specialize in the preparation of material for publication. They should proofread the material and handle the mechanical details of distribution.

The appearance of training material has a great deal to do with its acceptance. A part of the publication group should be composed of persons who can sketch well, to

aid in making printed material more digestible. Cold, typed material with no illustration may do well enough for those who are interested, but it will not hold the usual trainee.

Visual-aids Group.—A lecture without slides or motion pictures is dead indeed. The visual-aids specialist should see that motion pictures, slides, etc. are provided. He should see to it that models, dummy setups, etc., are available where they will help. Worn-out or defective machinery is a great help in instructing in assembly and disassembly. It serves better than photographs, as the trainee can touch it and actually put it together or take it apart. In many cases, defective machinery actually illustrates points that otherwise would have to be explained or pictured.

The visual-aids specialist will require some time after a course is started to furnish a kit of useful aids. He should have ready at the start enough to do the most essential parts of the job. The presence or absence of visual aids is often the difference between success and failure in otherwise identical training courses.

Analysis Section.—One of the most important parts of training is a continuous analysis of the results of that training.

The diagram shows the organization of the analysis section. These three groups together serve as a source of information to other sections and to the Director of Training.
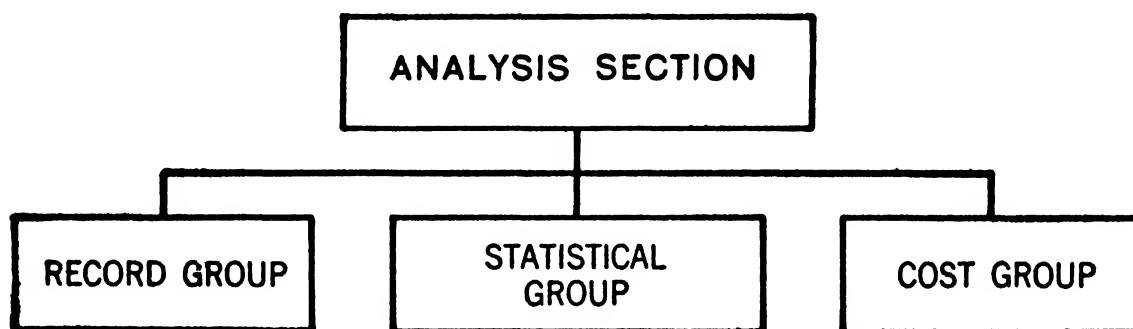
Record Group.—It will be shown later that there are numerous records that must be kept for evaluating con-

stantly the results of testing and training. The record section has the responsibility of keeping all records in such form that studies can easily be compiled from the data available.

It is necessary to keep the following records:

1. Tests and their grades
2. Applicant-interview grades
3. Training grades
4. Work-review grades

In large companies it is necessary to set up this information on cards that can be run through machinery for sorting out certain facts. The rental cost of punching machines and card sorters is very small. In some cases it may be desirable to have this information automatically tabulated. As there is usually not much of this work, it may if necessary be run occasionally on machines employed by the accounting department. The card-punch and automatic-sorting equipment is valuable, however.

The work is largely clerical, with considerable tabulation.

Statistical Group.—Information is frequently wanted from the records by the testing and methods sections. The statistical group is asked for this information. It is their work to set up methods by which the desired statistics can be obtained. Once the information has been obtained from records, it must be put in the form desired by the person asking for it.

Another important duty of this group is to supply to the company management lists that show names of workers or supervisors who are qualified for advancement to more important positions. When such a position is open, the statistical group will be supplied with the requirements for a person in somewhat the following form:

1. Required
   a. At least 5 years' experience with the company
   b. At least 2 years of supervision of a large group
   c. Experience in line production

2. Desired

    a. Knowledge of accounting methods (elementary)
    b. Knowledge of Spanish
    c. Latin-American parentage

The statistical group will then prepare a system of sorting for the record group. A list will be supplied showing the persons meeting all requirements, with pertinent data concerning their abilities as indicated by tests, training, and, especially, work review. If an insufficient number are found for this, certain of the "desired" elements will be dropped (one by one) until a sufficient number can be found from whom to choose. Data concerning each person will accompany the names. This list will be supplied to the department requesting it, so that a final choice may be made.

If no one can be found in the company, the job will have to be filled by the employment section.

Cost Group.—It was shown in Chap. I that certain sums are proper for training. It is essential that a cost group keep track of the finances of the training department. Regular company statistics can be taken as the basis. The statistics must be worked up from a cost standpoint, to judge the economical aspects of training at reasonable intervals.

The cost section should also handle the training budget and the necessary paper work in ordering training materials of all kinds.

STANDARDS DIVISION

Standards is the second division of the training department.
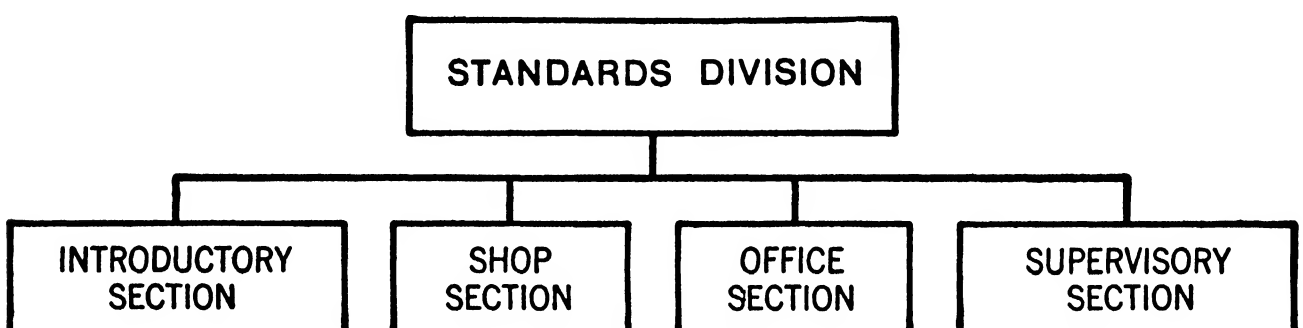
The standards division is responsible for setting up courses, and the members must see by sample inspections that these courses are taught in a standard manner. Trainees and supervisors should be interviewed for their reactions to the efficiency of training. Each section is responsible for setting up the method of instructor training for its type of work.

Introductory Section.—This section is responsible for proper introduction of the new worker to the company. Its courses should be required of all new personnel, regardless of their positions. As in the other sections, supervisors or workers within the company are the actual instructors.

Other names by which introductory training is known are Company Familiarization, Indoctrination, Initiation, Employee Benefit, etc.

Shop Section.—This section has one or more specialists who are responsible for setting up shop courses, which are primarily for manual workers. The person heading such a section must necessarily be a shop, or production, man. He will often have to work with the industrial-engineering group. This latter group is the one which, in many plants, conducts time and motion studies. The shop section can often bring suggestions to the attention of the industrial engineers for better work methods. Their prime responsibility is training.

Office Section.—The principal difference between the office and the shop section is the usual difference in such tasks. This section has the same relation to industrial engineering as was pointed out in the case of the shop section. An office worker, a supervisor, or a manager is the type of person who is usually best qualified for this type of work.
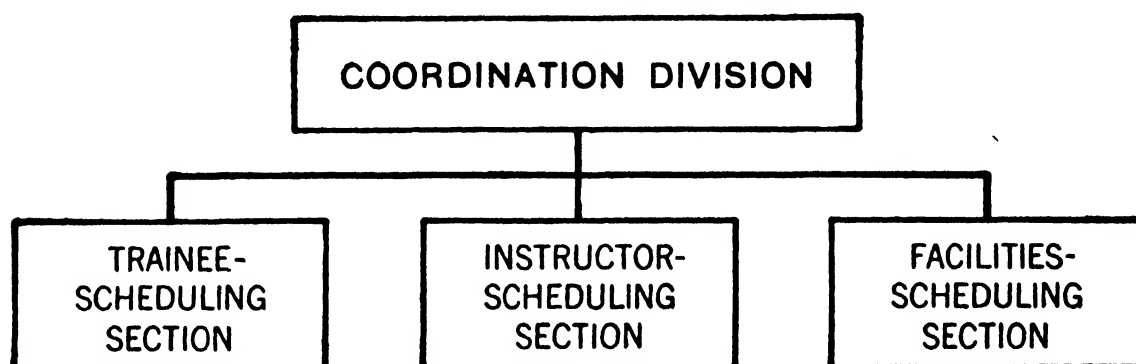
Sales training may be included in this section, which is often handled by a sales specialist.

Supervisory Section.—Supervisory courses are much more difficult than the usual shop or office course. The material is of great importance to the efficient operation

of the business. It is of the greatest importance to management. Proper supervisory training will improve the morale in the organization and prevent the otherwise common mistakes often made by new supervisors.

COORDINATION DIVISION

The principles set up by Research were embodied in the actual courses set up by Standards. These courses must be taken to the supervisor, so that he may present the course to the worker. In the case of the multiple plant, these coordinators may be situated at widely different locations. They may also be spread throughout one large plant.

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┌─────────────────────────────────┐
│     COORDINATION DIVISION       │
└─────────────────────────────────┘
     │              │              │
┌──────────┐  ┌──────────┐  ┌──────────┐
│ TRAINEE- │  │INSTRUCTOR-│ │FACILITIES-│
│SCHEDULING│  │SCHEDULING │ │SCHEDULING │
│ SECTION  │  │ SECTION   │ │ SECTION   │
└──────────┘  └──────────┘  └──────────┘
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The organization must take care of three things. Often one man will handle all duties at each location.

This division might well be called the "service division."

Trainee-scheduling Section.—The task of scheduling new and old employees falls within this classification. Arrangements for transportation, temporary housing, expense accounts, etc., must be handled. Very few companies can start a new class each day; therefore, the scheduling section must arrange the date of hiring to agree with the date of the next class. As has been pointed out previously, it may be necessary to send certain newcomers to another part of the plant or of the company, depending upon the places where similar courses are started.

In brief, the training and scheduling of the trainee must be carried out efficiently.

Instructor-scheduling Section.—Instructor scheduling must be handled in a manner similar to the scheduling of the trainee. Usually, both functions are handled by a
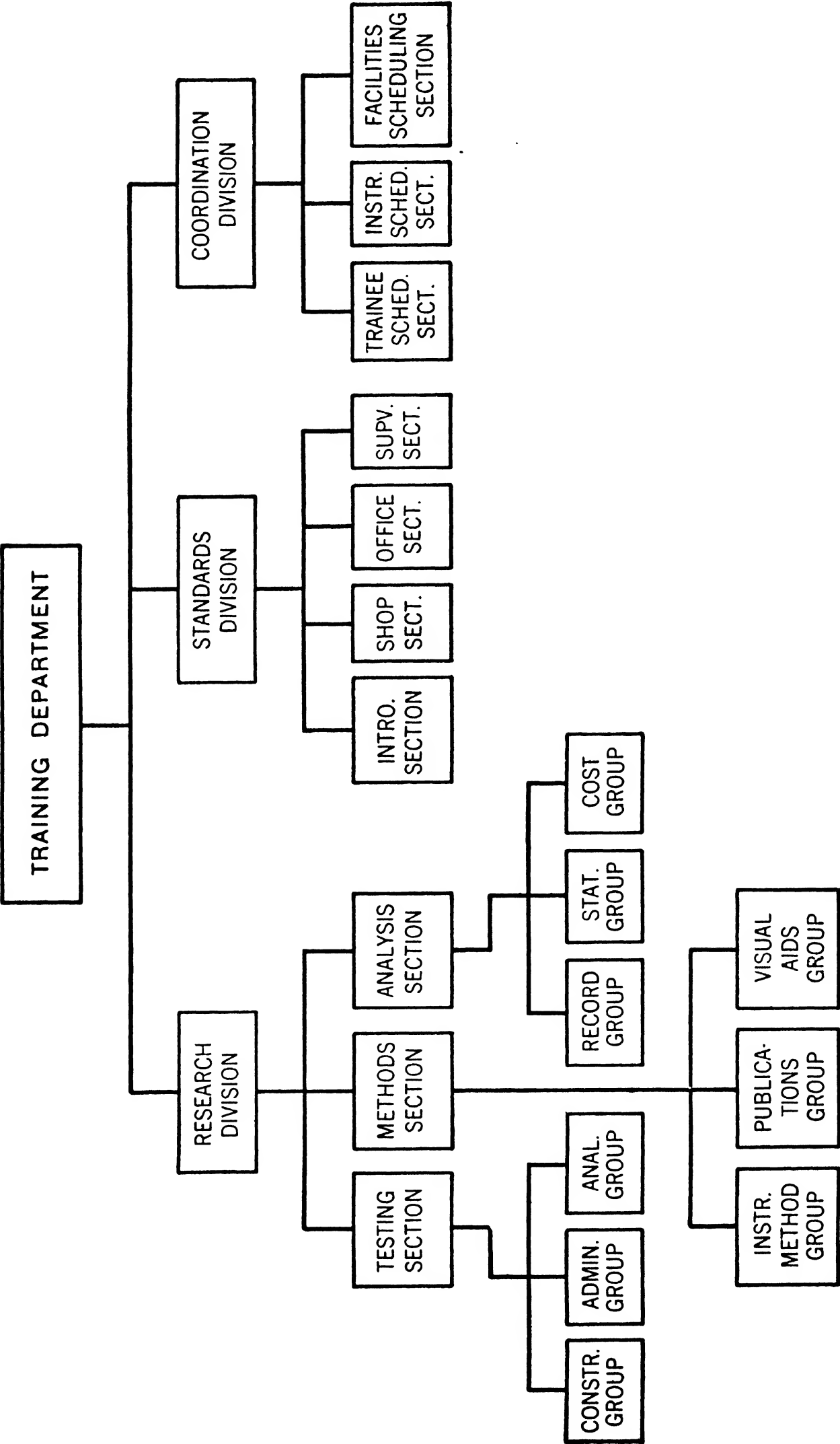
single person.   Before the instructor can be scheduled, he must be qualified.   It is the additional duty of this section to plan ahead, so that this scheduling may be made sure.

Facilities Section.—On the day of the appointed course, a room must be available for training.   The proper visual aids must be in place.   The room must be inspected for proper ventilation and lighting.   Chalk must be supplied, and the board must be clean.   All these things are highly important to aid the supervisor in beginning his work promptly.   The room must be free in time for that class. This scheduling can become quite difficult when only limited facilities are available.   Rooms used for training are used besides, for all sorts of company meetings.   This means that the coordinator must be in sole charge of scheduling the room, so that there will be no conflicts.

SUMMARY OF ORGANIZATION

Perhaps the best way to sum up this subject is by giving both a full organization chart and a flow chart.   These show what the organization is and how it works.

Authority is vested in the director of training to carry on the training functions of the company.   He, in turn, delegates authority to each division for its responsibilities as shown by the following organization chart.   Each division delegates authority to its sections to carry out their responsibilities.   Sections delegate certain authority to their groups.   In cases of controversy, the matter is passed upward to that level where authority for final decision rests.   A section head has authority to settle all questions between his groups.   A division head settles all questions between his sections.   Authority to settle questions within the training division is always vested in the first person in common authority to the two persons involved.   In cases of a question of authority between the training division and a person in another department, the question may be passed by the director himself to management for final decision.

FLOW CHART OF TRAINING

THE WORKER

THE TRAINING DEPARTMENT

GRADES, WORK REVIEW, etc.

TEST	
INTERVIEW	
INTRODUCTORY TRAINING	
WORK	
JOB TRAINING	
WORK	
SUPERVISORY TRAINING	
WORK	
INSTRUCTOR TRAINING	
WORK	
INSTRUCTING	
WORK	
ADVANCEMENT	
TERMINATION	

RESEARCH

TESTING

METHODS

ANALYSIS

STANDARDS

INTRODUCTION

SHOP
OFFICE

SUPERVISORY

COORDINATION
(for all courses)

TRAINEE SCHED.

INSTR. SCHED.

FACILITIES SCHED.

All Actual Training is Done by Supervisors.
Arrows Show Flow of Information.

The flow chart shows the various steps through which a worker passes in the company. First, he is tested. Then he is interviewed, he takes introductory training, etc. Finally, either his advancement continues to the highest position that he can reach or he may terminate his connection by leaving the company, as is shown at the bottom of the left-hand column. Thus, the progress of the worker is shown down the column on the left.

The right-hand column shows the various parts of the training department that have to do with the worker at his various steps. The testing section arranges his initial tests. Introductory training is specified by the introduction section. Lines with arrows running across the center of the page and to the left show this flow. The results of these actions by the training department result in grades, work reviews, etc. All this information pours into the research division, as is shown by the line drawn up the left side of the page and across to the training department.

The research division (dotted box), as a whole, pours these results into the standards division, which, in turn, passes on information to the coordination division. Out of each of these three divisions the material passes to the worker with such revisions as have been indicated by the actual results.

Flow lines entirely within the training department show flow of information within that department. The methods section, for example, specifies certain general methods to be employed by each section within the standards division. Note also that the methods section (with others) receives information from the analysis section.

Arrows show the flow of information and *not* authority. The actual training is done by supervisors.

QUESTIONS

1. Name three principal duties of the coordination division.

2. The analysis section and the cost group disagree. Who should settle the question?

3. If the instructor-scheduling section and a plant foreman cannot agree, through what channel is the matter settled?

4. The visual-aids group makes a far-reaching change in policy. By whom should this be approved?

5. The standards division disagrees with a procedure of the office section. Who settles the matter?

6. To what division do all grades come?

7. From the flow chart, would you say the research section dictates what the standards section will do? Or is this dictated by the organization chart instead?

8. Who supplies information on termination methods?

9. To what sections does the analysis section automatically supply certain information?

10. To what division are work reviews supplied by other parts of the company?

PROBLEMS

1. Draw a simple organization chart of a small part of a company with which you are familiar, showing the names of the persons involved.

2. Draw the same chart, but with titles rather than the persons' names. Is the second chart better than the first, and why?

3. Draw a simple flow chart of the work between those parts of the organization which you have shown above.

4. Draw a simple flow chart of a cafeteria. Show customer and worker.

5. Draw an organization chart of some proposed training department fitting a need with which you are familiar.

INSTRUCTION METHODS

There are several things that apply to all industrial training. Perhaps the most important of these is the number of trainees that can be handled by one instructor at one time. Opinion differs to some extent, but the concensus is that ten in one class are all that can be handled efficiently. The ordinary lecture often accomplishes little or no good. The object of training is to assure that the trainee has learned. It is essential that each individual shall be under the constant supervision of the instructor.

There are five kinds of industrial training:

1. Instructor training (Chap. VI)
2. Introductory training (Chap. VII)
3. Shop training (Chap. VII)
4. Service and sales training (Chap. VIII)
5. Supervisory training (Chap. IX)

This chapter will cover instructor training.

INSTRUCTOR TRAINING

Most of us have been trained in school by the lecture method. For this reason, it is best to start training instructors by having them actually give short, assigned talks to a group. This practice must gradually be improved to the point where the instructor is actually doing a good industrial-training job. The confidence that is gained by addressing a group is of tremendous value to any instructor in his work.

Before the instructor can give even a reasonably good talk, he must learn to prepare material. Then, whether

he uses material that another has prepared or his own, he will realize the full value of an instructor's outline.

OUTLINES FOR INSTRUCTING

The average person has difficulty in making an outline. There is one very simple way to teach this which should be a part of every instructor class. There are three steps in making an outline.

1. Make a list of the topics to be covered, in any order.

2. Rearrange the topics in more logical sequence and expand.

3. Sort the topics into a logical order of main topics and subtopics.

It is amazing that this simple process is often unknown. It is equally amazing how quickly a good outline can be made in this manner after a small amount of practice.

Take some subject, such as Conducting an Interview. Immediately a series of thoughts is aroused. Write them down (Step 1).

Polite—age—name—address—pay—type of job—physical examination—seat applicant—tests, etc.

Now arrange these in some order that seems more logical. Possibly some words will be changed and new thoughts added (Step 2).

Introduce yourself.

Ask applicant's name.

Ask him what type of job he wants.

Seat him politely.

Ask for his application form and note its contents.

Ask about his experience.

If unsatisfactory, tell him so.

Wish him good luck in the company.

If satisfactory, explain tests and examination.

Now the material is in better shape. The last step necessary is to put the material in good outline form (Step 3).

I. Greet the applicant.
    A. Introduction
        1. Your name first, as you shake hands
        2. His name
            a. He will usually offer it.
            b. If not, ask him for it.
    B. Ask him to be seated.
        1. Be sure he is comfortable.
        2. Seat yourself next.
II. Discuss the position wanted.
    A. Ask for his application if he has made it out.
    B. Ask what types of job he has had.
        1. After listening, look at application form.
           Comment on his appliction, to set him at ease.
    C. Ask what kind of job he wants.
        1. If he knows exactly,
            a. Tell him such a job is open or
            b. Tell him of similar jobs open.
        2. If he does not know exactly,
            a. Describe one or two jobs open.
            b. Watch for signs of interest.
        3. If he seems unsatisfactory or if there is no job, politely tell him so.
III. Discuss employment details.
    A. Explain tests to be taken:
        1. Written tests
        2. Shop tests
    B. Cover pay details.
        1. Pay, if qualified
        2. Working hours and special rules

Some parts of this outline are almost sentences. Other parts are a word or two. Nevertheless, it is an outline. It may be shortened or revised after this point. The material is in shape for instructing. Very rarely in industrial training need the complete material be written

out. The instructor teaching the group is qualified in the subject as he is a worker or a supervisor. What he does need is a guide, so that he will not wander from the main point or fail to cover the necessary material.

Sometimes the key points are capitalized for quick reference. Sometimes words are underlined.

PRESENTATION OF A TOPIC

Each topic explained to a group should be presented in a definite order.

1. Name the subject and explain the meaning of the words.

2. Show the actual thing itself or a photograph of it; or, if is is an action, demonstrate it.

3. Explain the key points, one by one.

4. Compare it with something known.

5. Ask questions or let the trainee *do it himself*.

6. Turn to the next topic and repeat the full process.

It is very important that all tools, illustrations, and other material should be ready in place before instruction begins.

INTEREST SPAN

The average trainee will be able to concentrate and listen attentively for about 5 *to* 10 *minutes, at the most.* It is for this reason that instruction is so difficult. If the material takes longer than this to present, break it up into 4- to 6-minute pieces by interruptions such as these:

1. An interesting and *short* story about the subject

2. A question to a student. (Ask the question first; then let someone volunteer or call on someone if this is required.)

3. A short quiz

4. A change in subject for a moment, giving some interesting information

5. A *good* joke or an amusing incident, with an immediate return to the main topic or the next topic.

ANSWERING QUESTIONS

There are numerous types of questions that will be asked. The method of handling them is very important.

Situation	Wrong handling	Right handling
A question that the trainee cannot answer	Sarcasm or "Sit down, Mr. Smith."	"Sorry. Mr. Jones, please."
Trainee says "Sorry, I don't know."	"Well, you should."	"Thanks. Mr. Jones then, please."
Wrong answer	"You know better than that" or "Wrong."	"Sorry," or "Who else can answer?"
Question well answered	Ignore it.	Praise the answer.
The man who answers every question	Shut him up.	Start asking others for answers by name.
"Show-off" questions	Laugh at trainee.	Answer question without anger.
Confused question from trainee	"What do you mean?" or "I don't understand you at all."	Try hard to restate before answering.
"Simple" or foolish questions	Laugh with the class.	Point out soberly "simple questions are often the best ones," and answer it carefully.
Unrelated questions	"I don't see the point."	"That question doesn't bear directly on this. May I answer you after class, please?"
Questions ahead of the subject	Answer it.	Say plainly that you are coming to it later. Ask for it to be delayed.
Questions the instructor cannot answer	Bluff it.	Say honestly you don't know. Then bring the answer next session, *sure!*
An incorrect explanation by the instructor	Overlook it.	State you have made a mistake. Correct it the next day after getting a simple *watertight* answer.

VISUAL AIDS

Something has already been said about visual aids. They are a most important teaching tool (other than

actually doing the job itself). Sometimes the visual aids are necessary to explain the reasons for doing something. In electrical work it is impossible to see electricity. Visual aids must come to the rescue. In work in hydraulics it is often well to build glass models with colored liquid flowing through them.

Visual aids include several general classifications, the most common of which are

1. Diagrams or charts
2. Still pictures

    a. Slides
    b. Strip film (slide film)

3. Motion pictures
4. Models
5. The thing itself

Visual aids actually should include aural aids, as well. Aural aids are the trainer's voice, records, and film sound.

Diagrams.—Prepared diagrams are often used in training. Their advantage is the perfection of the drawing over the same diagrams when made on the spot by the instructor. The advantage of blackboard diagrams cannot be overestimated. Such diagrams are built before the trainee's eye. Curiosity plays a big part in learning.

Prepared diagrams often may be approached with blackboard sketches. It is very important in using this aid, as well as others, not to display it before the trainee prior to the time it is to be used. The element of suprise in displaying the diagram is valuable. If it is entirely drawn beforehand, the trainee will look at it during the first part of the period. By the time that the instructor gets to the diagram, no one is interested. Further, the group will not listen well to the first part of the discussion because they will be paying attention to the diagram.

Therefore, diagrams should be displayed only when they

are needed and covered or erased when they are of no further use.

Slides.—One of the oldest and best means of projecting diagrams or pictures is the slide. The slide has all the elements of suspense and has none of the disadvantages of numerous charts placed on the wall.

There are two common sizes for slides. The first is a slide 2 inches square. It is excellent for projections up to about 4 feet square and more in semidark rooms. The other standard lantern slide is $3\frac{1}{2}$ by 4 inches and can be projected up to 7 feet by 8 feet or more, without using so much projecting light that the slide will be damaged by heat.

Both types of slide are useful, although the smaller size lends itself admirably to small groups. The projector for it is very small. The projector may be used also for strip film (to be discussed later).

Several factors are very important in the use of slides. First, colored slides are not so bright as are those in black and white. Where undarkened rooms are used, it is highly advantageous to use black and white. This holds for all types of projected pictures. All lines must be full and clear. Lettering must be large and easy to read.

The second factor that applies to all projected pictures is the use of dark training rooms. Absolutely dark rooms have a disadvantage, in that the trainee gets all ready to see a "show" and relaxes in his seat. This is undesirable. Further, the darkening of rooms in daytime, with the sudden contrast of coming out into the light, gives many persons headache. Lastly, the instructor cannot easily talk in the dark, as he cannot hold interest so well. He cannot watch the trainees to see whether they are really paying attention.

This all adds up to the fact that it is advantageous to have the room just as light as possible without ruining the projection. Lights at the opposite end of the room from the screen are not too objectionable. It is very important

to prevent sunlight or any other light from shining on the screen, as this will dim out the picture. Often venetian blinds give the ideal amount of light, if they are turned to admit as little light as possible. Windows near the screen or openings through which direct sunlight can come should be equipped with dark shades. If necessary, pull down all shades and turn on a few lights at the rear of the room.

In a semidark room, trainees can take notes, and all the disadvantages of a really dark room are overcome. Artistically, the pictures are definitely not so bright, but for training purposes they are satisfactory.

These same precautions apply to motion pictures as well, but usually the room must be considerably darker for movies than for slides.

Slides are cheap and form a *very good investment*.

Strip Film (Slide Film).—Strip film is handy to carry around and is unbreakable, in case it is dropped. It is composed of a number of still pictures printed on a strip of standard, theater-size motion-picture film (35 mm.).

Pictures are quickly changed by a lever on such projectors as that made by the SVE (Society of Visual Education). These same projectors will take the small slides referred to above. They can also be equipped with a turntable that rotates at 33⅓ r.p.m., with voice or sound effects. Such companies as the Jam Handy Corporation in Detroit make many strip films, a number of which are supplied with sound. The equipment is much cheaper than motion-picture equipment and can do a fair job. The lack of motion is somewhat of a disadvantage. The disadvantage of strip film over slides is that the picture sequence cannot be readily changed if the prepared material is not followed.

Strip film is inexpensive and easy to use. A small 1-inch diameter metal can about 1½ inches high will store some fifty pictures. The sound is synchronized with the picture by the placing of gong sounds on the record for

each picture change. Sometimes the operator will fail to make the change. It is well to go over the material once before showing it to a group, so that the instructor will have the sound-and-picture tie-up.

One disadvantage in presentation with sound is that the instructor cannot readily stop and talk about any one picture; but the expert instructor can stop the record with his finger tips and let the record slide with the turntable rotating below it while he talks. When the edge of the record is released, the sound then continues. With practice, the one major disadvantage can thus be overcome. The sound is better than the average instructor's voice, but a good instructor can do just as well with the slides or the strip, filling in the voice himself. Sometimes the instructor will listen to the record and duplicate the parts that he desires from his outline, substituting his own material where he feels that it is better.

It is well to see some good examples of strip film before attempting to make any. A list of some excellent examples follows. One or more of these may be secured easily. This list may not include the subject desired, but it will show the best techniques employed today.

Selected Strip Films.—These few strip films have been selected because they represent good technique and subject matter.

Effective Study Methods (Trainee type)
Made by Jam Handy Corp., Detroit, Mich.
This is an interesting strip film showing proper *methods of study* for the trainee.

How to Win Friends and Influence People (General appeal) (with records)
Made and distributed by Audivision Co., New York.
This is a version of the famous Dale Carnegie book, divided into various parts. A novel feature is the presentation of *cases* on the back of each record. Other *written material accompanies this kit.*

I Want to Learn (Instructional type) (with records)

Produced and distributed by Jam Handy Corp., Detroit, Mich.

This is an excellent film *for instructors.* It shows the various *learning methods* and their value.

Some Principles of Teaching (Instructional type) (with records)

Produced and distributed by Jam Handy Corp., Detroit, Mich.

Aptly described by its title, it reviews *teaching principles.*

Stromberg Injection Carburetor (Technical type)

Distributed by the Bendix Aviation Corp., Bendix, N. J.

An excellent strip showing *how carburetors work,* with emphasis on the particular type named in the title.

Supervisory and Foreman Training (Supervisory type) (with records)

Made and distributed by Jam Handy Corp., Detroit, Mich.

An excellent strip showing the *principles of supervision,* with examples of the proper methods.

Motion Pictures.—Some feel that movies are the ultimate answer to training. While many good films are available, there are many more mediocre to bad ones. Certainly, one of the major contributions of the Second World War is the discovery of how to make good training films. Some of the 1943 and, especially, the 1944 motion pictures are wonderful. A few good ones were made prior to that time.

All the remarks that had to do with strip film and sound apply here, as well. The trouble with keeping the sound and the picture synchronized vanishes. Motion pictures can be stopped with certain machines while the instructor fills in his remarks.

Several facts about movies are well established.

1. About all that can be absorbed at one time by a group for instruction is in a period of 20 to 30 minutes.

2. It is no crime to show only a part of a reel; this is often a good idea.

3. It is an excellent plan to weed out, by splicing, those parts of the film that are thought to be poor or lengthy.

4. The group *must* be well prepared for what they are going to see.

5. After the film is over, the group should be questioned carefully about points.

6. Entertainment films should be shown in a dark room with little attention to steps 1 to 5 above. Films for training (even if they are the same ones) should be shown in a semidark room with all the above points kept in mind.

Selected Movies.—The following (16 mm., with sound) are examples of good films. Each is a special kind, and some remarks will be made about each one.

Aerology Series (Technical type) (Air Masses and Fronts, Fog, Icing Formation and Fog—Four films)

Made by Walt Disney for the United States Navy. Presently "restricted."

These films are about the finest that have ever appeared. They are especially good instructional films, as they employ every device for proper instruction. They treat meteorological conditions met with in flying. The use of *constant review throughout and at the end* of the film is especially good. *Serious cartoon illustration* is used throughout. The techniques employed set a standard that will be followed by many in time to come.

Ambassadors of Good Will (Work-method type)

Made by Transcontinental and Western Air, Inc., Kansas City 6, Mo.

This film first shows *incorrect ways* to service air-transport aircraft. It shows incorrect passenger handling. There is just enough humor and exaggeration so that there is no danger of anyone's thinking these methods are correct. The second half of the film shows a *correct, orderly method* of doing the job. The film is photographed at one of the actual airports.

Basic Electricity as applied to Electronic Systems (Technical type) (two films)

Made by Walt Disney, with the Minneapolis Honeywell Co., for the U. S. Army. Presently "Restricted."

This film employs *cartoon actors* for voltage and current in electrical circuits. Other parts of the film use *actuated diagrams* to show how otherwise complicated electrical and electronic circuits behave. The difficult subject of electricity is better portrayed here than ever before. It is perfectly plain to the layman and interesting to the trainee.

Discipline-giving Orders and Reprimanding (Supervisory type) (two films)

Made for the United States Navy and distributed by Castle Films, New York

These are excellent examples of treating two subjects by actual *cases.* The films are easy to remember and very good.

Every Tenth Man (Safety type)

Made for the Boeing Aircraft Company by the Calvin Company, Kansas City, Mo.

This is a *safety film,* which shows the methods of preventing accidents. It is typical of the best safety-program films today.

First Impressions (Introductory type)

Made for the United States Navy and distributed by Castle Films, New York,

This is an excellent film, which shows how the Navy expects *new personnel to be introduced to office work.* It carries the story of a new worker through her first week.

Four Steps Forward (Instructor type)

Produced and distributed by Jam Handy Corp., Detroit, Mich.

How to *prepare and present instructional material.* A very good film for training instructors.

How to Remember Names and Faces (Sales type)

Distributed by Modern Talking Pictures, New York.

An excellent film showing methods of identifying persons after one introduction. The film ends with an excellent *audience test shown on the screen.*

Tips for Teachers (Instruction type)

Produced and distributed by Jam Handy Corp., Detroit, Mich.

This is a film in which an actor shows what is necessary for instructing by *acting the part.*

Winged Horizons (Introductory type)

Made by Transcontinental and Western Air, Inc., Kansas City, Mo.

A *travel film* showing a passenger traveling across the country with a stopover at the main base to see the careful *maintenance methods.*

Models.—Models are often valuable in training. They may be working models or wooden dummies. They should show things that cannot be shown so well by dia-

grams or slides.   There should be some real point to the model.   Often it is well to allow the group to feel the model and to work it themselves (or take it apart or what not).

Often it is about as expensive to get a model as to get the real thing.   Worn mechanical devices ready for scrap are often excellent for group instruction.

The Thing Itself.—Better than a diagram, a picture, or a model is the article itself.   In sales, the real article may be a situation between two persons.   In mechanics, it may be a part or a small machine.   In introductory courses, it may be a trip through the actual plant instead of a movie of it.

The thing itself was entirely too rare in industrial training of the past.   It will be common in modern industrial training.   The mere fact that a person can explain how something works does not excuse him from presenting the actual demonstration of it.

The following results have been found to be general.

Achievement	By ear alone, per cent	By eye alone, per cent	By both together, per cent
Learning retained after 4 months	4	4	30

These figures have been quoted in many ways.   For some purposes one of the two separate methods is better than the other; but both together is always preferable. Lastly, whether in a diagram, a motion picture, or a talk, *keep it simple.*

HOMEWORK

In most industrial training there are no assignments requiring work at home.   In many courses it is helpful to prescribe a short amount of material of this kind.   It gives the trainee just one more opportunity to review his work. Each such isolated opportunity means better learning. This is not applicable to shop subjects.

INSTRUCTOR FAULTS

A number of faults are likely to impede almost any instructor, especially when he must address a group. Such difficulties as those listed in the table below are easy to correct and should be stressed in instructor training.

Item	Fault	Remedy
Hands	In pockets Jingling change Playing with chalk Leaning on them	Use for good gestures Use to show objects Keep at side or relaxed when idle
Feet	Standing on one foot Too much walking Swaying	Keep weight evenly on feet Spread feet slightly
Clothes	Loud Too dressy Dirty	Should be appropriate Wear shop clothes in shop Wear business clothes where class does
Eyes	Looking at ground Looking in air	*Look* each *trainee* in the eye at frequent intervals (It is a big attention getter)
Voice	Too loud or too soft Too flat Falls off Monotonous Too fast "Ah-Ah" or "Er-Er"	Practice with a group that will give honest comments *Never read* Ah's and er's can easily be corrected by having them pointed out daily
Back	Talking with back to class when writing on board	Stop talking when writing Let the class watch the board *Keep well out of the way of what you are writing*

INSTRUCTOR TYPES

Lecturers belong to a number of types. Perhaps some of the types listed in the table shown at the top of page 84 will be recognized.

PARTICIPATION

Participation is the key to proper instructing. It is essential that the *trainee be doing something himself* as much of the time as possible. It is necessary, sometimes,

Type	Fault	Correction
"Bright boy"	Admits being an expert Far too technical Covers too much material Loves to answer long-windedly Talks far too fast and too long	In instructor training make him simplify terms and outline material Time all talks to the second
Bluffer	Does not know subject Uses long words Dodges questions Sarcastic and critical	During instructor training he will try to bluff his way through. Once he realizes he cannot bluff, he will stop the practice
Deadly earnest	Probably afraid of talking to group Believes, if class does not grasp material, he is fully at fault	Encourage him to smile Try especially to have him purposely inject some humor and relax He is scared
Conceited wit	Too much humor Is easily led off topic Too many personal experiences Wastes time	Force him to make outlines that require his full time and make him follow them Discourage personal stories
Bully	Terrorizes class, preventing proper learning Takes advantage of his position to bawl out trainees	Can be stopped only by bringing it forcefully to his attention
Gossip	Depreciates company Depreciates other instructors Reveals confidences	Requires digging to bottom of situation to find reason for bitter attitude. May require discipline. Must be stopped at once.

to have a certain number of lectures. It is essential that the trainee enter into the lecture as much as possible. Questioning, quizzes, and the actual handling of materials are included in participation.

All instructor courses should require that the trainee spend time making short outlines and giving short talks to the rest of the group. The complete group must comment on each of the talks. These talks, which should ordinarily occupy about 2 to 4 minutes and be stopped

exactly on time, may be lengthened in the final sessions to about 10 to 15 minutes. By that time the new instructor should have gained the necessary elements of public speaking. He should also have passed well beyond that point. Indeed, he should have the class working with him at every moment.

Showmanship is necessary. The instructor-trainee must have models, diagrams, slides, and the like, for these last talks. Under no circumstances should he be allowed merely to talk uninterestingly.

AN INSTRUCTOR'S COURSE

The length of most instructor courses is dependent upon the number of instructors being trained. The maximum should be ten to a group. It is quite possible to spend hours in explaining good teaching before allowing the instructor to get to his feet. This will be largely lost time. In such courses, the instructor conducting the instructor course will be the only one enjoying the lectures.

A plan such as the following may be used. The exact arrangement of the course must be left to the training-department staff. Very rarely is any course taken directly from a book such as this. The training department usually has its own ideas, which is a good sign. It is a proof that the staff is progressive.

Instructor I (first 2-hour session)

1. Explain how to make outline (10 minutes).
2. Ask everyone to make an outline for a 3-minute talk (10 min.).
3. Eleven 3-minute talks, with 2 minutes of total comment by *each member present*. Lastly, the instructor also gives one talk that is criticized (55 minutes).

An intermission at end of first hour, which will come at some time during the 3-minute talks (5 minutes).

4. Explanation by instructor of the five types of training (10 minutes).

5. Ask how each type of question should be answered. The instructor should develop the methods of answering, (25 minutes).

6. Ask each to bring outline for a talk on introductory training (5 minutes).

Instructor I (second 2-hour session)

1. Discuss common instructor faults and remedies (5 minutes).

2. Eleven 3-minute talks, with 3 minutes of comments. Here, for the first time, point out that good points of each talk must be mentioned as well as bad ones (66 minutes).

Intermission (5 minutes)

3. Ask for about four repeats of best talks (24 minutes).

4. Assign 5-minute talks on shop training. Insist that at least some simple tool, etc., be brought to demonstrate (20 minutes).

5. Discuss shop training.

Instructor I (third to fifth 2-hour session, inclusive)

1. Discussion between instructor and group on shop training, service and sales training, and, finally, supervisory training—one topic on each successive day (12 minutes).

2. Eleven 5-minute talks with 3-minute discussions of effectiveness of instruction (88 minutes, including intermission).

3. Discuss instructor types, visual aids, grading methods, and other subjects believed to be of benefit to the group (10 minutes).

4. Discuss material for the next day, and on the last day assign to each the type of instruction he will use in his future instruction (10 minutes).

Instructor I (sixth 2- hour session)

1. Discussion of the methods of obtaining visual aids (5 minutes).

2. Eleven 8-minute instructor demonstrations, with 2 minutes of comment on each (115 minutes, with one 5-minute intermission).

3. Assign a prepared outline to each for use the next day, using outlines covering actual subjects that instructors will be using.

Instructor I (seventh session)

1. Point out the high degree of participation by the group in instructor training, explaining that this ratio cannot always be maintained in all subjects but should be attempted (5 minutes).

2. Same as sixth day (115 minutes).

3. Assign one subject to the whole group for a 5-minute talk for examination in next session. Explain examination on last day.

Instructor I (eighth and last session)

1. Ten instruction demonstrations of 5 minutes each. Each trainee grades others, as does the instructor (50 minutes).

Intermission (10 minutes).

2. Written examination on entire course (1 hour).

INSTRUCTOR REVIEW

It is very advantageous, as a part of training, to place a pad of instructor-rating sheets before each trainee early in the instructor course, so that he may comment on instructor practice. This same sheet is useful later for passing on comments to instructors when the coordinators sit in on sessions to check the quality of training with the standards set.

In many places it is regarded as unfair to have an instructor's work inspected at intervals. If it is pointed out that factory inspectors do the same thing for the product, the objectors may realize that this procedure is a sensible one. When it is done properly, this will raise training standards and help the supervisor doing the training.

Instructor Review Sheet

Factors	(0)	(1)	(2)	(3)	(4)
Knowledge of job: Subject being given	Hazy		Spotty		Well informed
Instructing principles	Disregards		Follows most		Uses all
Punctuality: Start and stop	Both late		Fair		Exact
Following schedule	Disregarded		Irregular		Well done
Group interest: Trainee attention	No interest		Lost sometimes		Absorbed
Questions asked	None or too many		Few and poor		Enough and good
Group participation	Lacking		Irregular		All contribute
Intelligence in instructing: Presentation	Disorganized		Normal		Well planned
Accuracy	Many mistakes		Small slips		Factual
Use of visual aids	Talks only		Some aids		Many aids
Relations with group: Reaction of group	Dislike instructor		Just accept instructor		Well liked
Showing off, sarcasm, gruffness, criticism, arguing (cross out those not applying)	Frequent		Occasional		None
Planning: Materials	Unavailable		Used but not smooth		In place, well used
Outline	Not used		Usually followed		Used and well followed
Forcefulness: Leading group	Cannot lead		Leads passably		Fine leader
Motions, eyes on group, voice, use of board (cross out those not applying)	Weak		Passable		Forceful
Follow-through Room condition (lights, air, dirt)	Poor		Passable		Good
Emphasis, key points	Passes over		Mentions		Keeps clear

Interest in the group, intelligence in instructing, good relations with the trainees, punctuality, forcefulness, and follow-through are very important factors in instruction. A similar list of factors was considered previously in relation to work of any kind. Knowledge of the subject and of ways to instruct in it are also very important.

An instructor review sheet follows. Such a sheet should be filled out immediately after hearing an instructor. The most beneficial time for giving it to him (at least, one copy of it) is immediately after making it out. *It must be remembered that both the good and the bad are to be emphasized.*

When instructors are having trouble, it will be best to include them in several special sessions for correction. The method is exactly that employed in instructor training. Each person and the instructor, too, gives a short part of a course. Each points out defects. Then a second trial is made. Often a few hours will clear up any difficulty. The instructor must be subject to the same suggestions for improvement of his methods as is the particular supervisor-instructor who is being helped.

SUMMARY OF INSTRUCTOR TRAINING

The disadvantages of the "straight" lecture are shown. Outlines are all-important in proper instruction technique. The method of presentation of each topic involves five steps:

1. Subject
2. Illustration or model
3. Key points
4. Comparison with the known
5. Question

The interest span is but 5 or 10 minutes.

Questions must always be asked to promote relaxation of trainee tension and to make sure that trainees have learned.

Visual aids are used far too infrequently.   The method of increasing use of visual aids, with examples, is shown.
Participation by trainees is all-important.

QUESTIONS

1. What are two important points in the presentation of any topic?
2. How long is the average interest span?
3. How do you answer a show-off question?
4. Name three commonly used visual aids.
5. What is another name for strip film?
6. What is the best type of model?
7. What is one principal fault in using a blackboard?
8. What is the principal fault of lectures?
9. What is the main purpose of questioning trainees?
10. What are the highlights of the material covered called?

PROBLEMS

1. Make an outline of a very short talk.   Show every step in making the outline, from the rough beginning to the final product.

2. Select some one technical fact and show with what you would compare it to make it clear to anyone.

3. Give your actual answer to a trainee to a question far ahead of the topic under discussion.

4. What models would be useful in teaching a subject of your selection?

5. Prepare a number of questions that would be proper in amount for homework for one night of a man employed in industry.

INTRODUCTORY AND SHOP TRAINING

Introductory and shop training were the second and third types of training mentioned in Chap. VI. They are grouped together, as they represent the two types of training for shopworkers.

Introductory training is common to every other job in a company, as well.

INTRODUCTORY TRAINING

On the day that the new employee enters a plant, he should be started immediately in his introduction to the company. One excellent plan calls for having the first 2 hours after employment spent in initial introduction to the company. Every succeeding day or every other day, introductory training will continue with another 2-hour session. The total time required is 8 or 10 hours. An illustration of such a timetable was shown in the first few pages of Chap. IV, on Training Programs.

The subjects to be covered in introductory training are

1. Employee benefits (the important and uncommon ones)
2. Policies of the company (the major ones)
3. Organization of the company (keeping it simple)
4. Brief history of the company, including its chief competitors
5. Products of the company
6. Equipment of the company (machines, building, trucks, etc.)
7. Trip through the plant
8. Plans for the future
9. Examination on the above (Don't forget this.)

tor must try it on a number of beginners. In this manner, certain steps will be found too difficult. The trainee must not be criticized; the outline must be changed.

In shopwork there are certain key points, as there are in any other training. Some of these relate to safety. The training on the actual operation will be broken by having safety tips introduced at reasonable intervals.

Once the outline seems to work properly, it must be decided whether the amount of time is sufficient. Often the outline will be geared too high. Then the trainee will not thoroughly learn each part of the job. A slight amount of extra time will usually cure this.

Preparation for Instruction.—As the worker is being trained on the job, it goes without saying that everything must be in place before he starts to learn. A worker cannot learn to operate a lathe easily by simply watching the instructor from behind the lathe. The worker must look over the instructor's shoulder or stand beside him in as nearly correct a position as possible.

The Job-Instructor Training course devised early in the Second World War summarized these points nicely. Its main points, somewhat modified and rearranged, are shown here:

How to Get Ready to Instruct

1. Break down the job (the outline).
    a. List the principal steps.
    b. List the key points besides some of the steps.
2. **Have a timetable** (length of time on each step).
    a. Determine a reasonable learning speed.
    b. Devote about the same amount of time per step to each trainee thereafter.
3. **Have everything ready** (actual work condition).
    a. Equipment, tools, and materials in proper place—and clean
    b. Instructor in position for doing work
    c. Trainee facing same direction as instructor, in position to see the instructor's hands and work.

The outline produced after following these steps does not take very long. The following is an example of the beginning of such an outline. The outline would continue to the end of the job.

DRILLING PART NUMBER 456

Instruction time, minutes	Steps	Key points
2	Unscrew chuck with tool and remove dull drill	Show difference between dull and sharp drill
2	Insert new drill to bottom of chuck and tighten	Be sure to bottom. Tighten chuck firmly
3	Turn on drill	Be sure chuck-tightening wrench is out of chuck. Explain dangers of 1. Took in chuck 2. Clothing catching 3. Hair catching
4	Have trainee repeat steps and explain key points	(See that about 7 minutes has been occupied up to this point)
1	Fasten part to be drilled in special clamp with drill jig	Danger of holding parts by hand
5	Drill holes by jig	Speed of feed

Job Instruction.—The instructor is now ready to begin. Here, again, the Job-Instructor Training course referred to outlines the mechanics of instruction very well. It is reproduced below, with some slight modification.

How to Instruct

1. Prepare the worker.
    a. Put him at ease.
    b. Find out what he already knows about the job.
    c. Get him interested in learning the job.
2. Present the operation.
    a. Tell, show, illustrate, and question carefully and patiently.
    b. Stress key points.

   c. Instruct clearly and completely.

   d. Take up one point at a time.

   e. Each point must be mastered before continuing.

3. Try out performance.

   a. Have the worker perform each part of job—finally the full job.

   b. Have him tell and show you the job and its key points.

   c. Ask questions and correct errors patiently.

   d. Continue until you know that he knows.

4. Follow up.

   a. Put him on his own.

   b. Check frequently and encourage questions.

   c. Designate exactly to whom he goes for help.

   d. Taper off extra coaching and close follow-up.

If the worker has not learned, the instructor has not taught.

This last statement is a hard thing for any instructor to learn. Once he has mastered it, he is on his way to becoming a good instructor.

Assembly Training.—Assembly work is taught in much the same manner as any other shop training. One of the best instruction tools is the exploded-view diagram.

An exploded view shows a unit that has been pulled apart. In a simple case this might consist of a bolt, two different washers, a bracket with a hole in it, two more washers, a nut, and a cotter key. Each is numbered from 1 upward *in order of assembly.* The bolt would be sketched at the left, with each washer to the right of the bolt with a gap between every two pieces. Just below the hole in the end of the bolt is shown the cotter key. This is followed by the bracket, the remaining washers, and the nut. It is obvious to the assembler how this unit must go together. The first thing to do is not to place the cotter key through the hole in the end of the bolt, as this would prevent slipping the washers into place. The washers, the bracket, and the remaining washers must go on first. The nut follows, and the cotter key locks the assembly.

The assembly order should be shown below the diagram.

Operation	Key point
Washer 2 on bolt 1	Use flat washer
Washer 3 on bolt 1	Use rubber washer
Bracket 4 on bolt 1	Finished surface near bolt head
Washer 5 on bolt 1	Flat washer
Washer 6 on bolt 1	Lock washer
Nut 7 on bolt 1	Tighten till bracket just compresses rubber washer
Insert cotter key 8	Spread key over nut faces

Disassembly can be accomplished merely by reversing the order, in most cases. Otherwise, a special note on disassembly can be added.

A parts list can be shown on the opposite face of the card with inspection information for rejection of parts. The rejection information is especially valuable for overhaul operations.

Diagram number	Part number	Usual cause of rejection
1	XT-56786	Worn threads, galled head
2	RU-67/781	Washer bent perceptibly
3	CV-4563	Rubber must be new, uncracked
4	678,987	Rust on face, oil on face
5	RU-67/781	Washer bent perceptibly
6	LW-67	Flattened or dull teeth
7	CN-5678	Worn threads, worn faces
8	COT-67	Must be new cotter key

Some assemblies with many parts are extremely difficult. In this case, several exploded views can be used for each subassembly. A final assembly view can be used to complete the job.

These exploded-view charts, with the information shown, are also valuable for overhaul operations. They are invaluable where one person must overhaul a multiplicity of units, each at infrequent intervals. Card files of each

assembly may be permanently located with the machine or in central files.

If the exploded-view charts are kept up to date, it is not necessary for overhaul men to know of changes in advance. Reference to the card will show the latest changes at each overhaul period.

SUMMARY OF INTRODUCTORY AND SHOP TRAINING

Introductory training gives all new workers and all new supervisors an idea of the company and its workings.   This is done, immediately upon their entering the company, during part of the working time over a short period of about a week.   The newcomer is introduced to

1. Benefits
2. Policies
3. Organization
4. History
5. Products
6. Equipment
7. Tour of plant
8. Future plans

Shop training involves an outline of the process to be taught.   The instruction is covered by four main steps:

1. Preparation of the worker
2. Presentation of the operation
3. Tryout performance
4. Follow-up

Shop training takes place at the machine to be used. The great value of the exploded view as an improved technique is rapidly becoming realized.

QUESTIONS

1. Name four things vital to introductory training.
2. What is training called that duplicates the shop setup, but is located outside the shop?

3. What often takes the place of an instructor outline in the shop?

4. What is the first step in getting ready to instruct in the shop?

5. What is the first step in shop instruction?

6. If the worker has not learned, where would you first look for the fault?

7. What is the final main step in shop instruction?

8. In presenting an operation, name the most important duty or duties.

9. Name any one common assembly that can be shown well by an exploded view.

10. What is an easy way to show manufacturers' part numbers without confusing a diagram of the assembly?

PROBLEMS

1. Make a job outline of some simple job with which you are familiar.

2. Make a timetable for the above job.

3. List several ways in which you would put a new worker at ease.

4. Draw an exploded view of some simple, everyday device.

5. Label the above drawing parts with numbers. List these numbers with imaginary manufacturers' numbers.

CHAPTER VIII
SERVICE AND SALES TRAINING

The fourth type of training outlined in Chap. VI is Service and Sales Training. In all cases, it is assumed that this service or sale is to the general public.

SERVICE TO PUBLIC TRAINING

There are numerous jobs in which the worker is directly in contact with the public. In such training, it is impractical to allow the trainee to work with the public as he learns. For this reason, "vestibule" training is most useful.

Vestibule training is the training of a worker in a situation as nearly like the real one as possible. The usual classroom training does not attempt to do more than tell the trainee what he must do and what will happen. Vestibule training, on the other hand, duplicates the situation and the trainee is a part of it. He can make mistakes with no resultant ill will or loss of customers.

There are several kinds of services to the public. They are

1. Personal (carrying bags, delivering goods, making repairs, etc.)

2. Telephone (taking orders, making reservations, answering questions, operating switchboards, etc.)

3. Sales (selling goods, selling service, etc.)

4. Interview (hiring, making surveys, etc.)

Each of these will be further explained in greater detail with the methods that may be used for effective training.

PERSONAL SERVICE

There are many jobs that are of direct service to the public. In this category are such services as are not solicited. They are those that the public expects from a com-

pany. Sometimes selling is involved as a minor part of the job.

The cabdriver gives this type of service. If he is merely waiting at an hotel stand for a call, there is little selling involved until the customer actually enters his cab. Once the customer is properly seated, the driver's primary job is to be of as great service as possible, in order to earn the tip that he may expect. It is also important to the company that operates the cabs that he create as good an impression as possible. This is, indeed, a type of selling. What is actually sold is *good will*.

The ticket agent gives this same type of personal service. He does not solicit for the sale of tickets. He merely stands ready to handle the approaching customer. A secondary part of his job may be selling insurance or round-trip tickets. His prime object, from the company's standpoint, is to create *good will*.

The initial period of training is most critical. If the cabdriver can not find addresses or if the ticket agent takes forever to make out a ticket, the public "gets sore." This often reacts on the worker, who then becomes intolerant of the intolerant public and is "sour." From that point onward, the result is likely to reflect unfavorably on his company.

Perhaps the ticket agent represents one type of training problem that is more difficult than some others. What does he have to know?

1. Routes
2. Connections and times
3. Fares
4. Forms
5. Making change
6. Transportation regulations
7. Handling the public

The first three items fall into the quick-reference class. The remainder fall into the practice class.

Such items divide themselves into two main groups:

1. Things learned by *quick reference* on the job
2. Things learned by *practice* before starting the job.

Quick Reference (in ticket selling).—Routes are usually learned from a map. On this map will be included the principal railroads, for example. Another map may show air lines. Still another may show bus lines. In each case, it is important to explain the map to the trainee. Once this has been done, he must be drilled in locating places and finding what transportation lines serve them.

It would be preferable to have him travel all over the line that he represents, but after this was done he would still have to travel over connecting lines of various types. Naturally, this is impossible.

Connections and times of arrival and departure fall into this same category. In this case the trainee will refer to a railroad, air-line, or bus guide. He must be taught the standard system of using such material. In some cases he will look up the city first and find the lines serving it. In other cases he will know the line and will need simply to turn to the particular schedule. Here, again, drill is required up to the point where the material can be used accurately. Speed will be acquired later.

Fares fall within the same classification. The calculation of tax or the reference to tax tables must be learned by example and by practice.

In all these cases it is most important that every trainee shall participate. The instructor merely breaks down the material so that it can be learned in reasonable steps. *If a systematic method is learned,* the exact routes, times, and fares are not important. The worker will learn these details in many months of practice on the job. He will learn them then to save himself trouble in looking up common details over and over again.

Practice Training (in ticket selling).—Forms are most

confusing to a trainee. The instructor just cannot understand how anyone can fail to put the right things in the right places. "Why, it says what goes in each place on the form!" Unfortunately for the trainee, forms have been improved by persons who have been on the job for years; they are rarely designed for training convenience.

A common practice in filling out forms is to project a form from a slide projector onto a blackboard. The board may have to be made whiter by being rubbed with a chalky eraser. The instructor projects the form and then fills in the blanks with chalk. Many forms have a half dozen entries or more, with special exceptions. The blackboard method is excellent; but when part of the form has been filled out, it is time to turn off the projector and have everyone in the group fill out that part of the form on sample tickets. The instructor can walk around as he calls out information and can watch for mistakes where individual help may be needed. All the information is taught in the order on the form. More examples with the material not in proper order should be given to the group to provide them with further practice.

Standard Situations.—Up to this point, the training has been concerned with the tools of the trade. After the first form has been taught, it is high time to simulate the actual work space. An inexpensive, standard counter can be constructed without the decorations otherwise necessary. The group can be split into "customers" and "ticket sellers." The instructor is now the overseer. To start the ball rolling, he gives each customer a card instructing him to buy a ticket to a certain place. The customer steps up to the counter and asks the ticket seller for a ticket. Both learn as the route, connections, and times are found and the ticket is made out. Both persons are responsible for seeing that the ticket and the information are correct. This is quickly verified by the instructor, who has the answer keyed to the "situation" card number, in order that he can quickly and accurately check the trainee.

After sufficient practice on this type of form, another is shown and practiced.

There is no reason for not using stage money and coins for the transaction. This helps the trainee in making change. When one is occupied with the many other details in a service job, making change is confusing. Eventually, cash forms and the like are introduced.

As each new form is introduced, the trainee must recognize the new "situation," since it may involve the use of one of the older forms already learned.

Situation cards should contain questions to be asked of the ticket seller. Later actual customer types can be simulated somewhat by adding to the situation cards such things as "You are in a hurry. Continually remind the ticket seller that you will miss your schedule if he doesn't hurry." These things will be accepted by the trainee, as he understands that they are duplicating actual conditions. The instructor must watch these situations to see that they are not only properly presented, but that the ticket seller answers as he should. Brief talks will explain what is to be practiced next. Transportation regulation will be explained in the same manner—a little at a time.

Although the ticket seller will not be an "old hand" when the practice is over, he should be able to work steadily without confusion. At this point, he is ready for the job. An older employee, who can answer questions when a new actual situation arises, should work close by.

Again, it is seen that the thing to do is to break a job down; then try to instruct in a manner that presents material slowly. Allow the maximum participation by all in the group.

"How to Win Friends and Influence People," by Dale Carnegie, and "How to Develop a Good Memory," by Robert H. Nutt, are useful for all types of service and sales training. They can be covered slowly during the training period.

TELEPHONE-SERVICE TRAINING

Much telephone sales work is actually telephone-service work. The customer calls in and wants something specific. There is not much selling to be done unless there must be a substitution or an addition to the initial sale or service. Again, *good will* is the principal object of this service.

The operation of switchboards is generally taught by the local telephone company. The operation of individual telephones depends on the special arrangement of keys, buttons, etc., with which the telephone is equipped.

The first step that must be learned is the proper use of the telephone instrument itself. It goes without saying that training can be accomplished only with two or more telephones.

An excellent arrangement calls for two telephone booths. These booths may be built especially for training purposes and should include the following:

1. A seat or chair
2. A shelf on which the trainee can write
3. Glass sides so that other trainees can watch
4. Glass sides so that the two trainees can watch each other
5. An amplifier and a small loud-speaker, to allow the group to hear the conversation on the telephone line
6. A good ventilating fan, to move air *through* the booths.

One trainee may be seated in one booth, the instructor, in the other. The trainee and the instructor should be about 4 to 8 feet apart and facing one another through the booth windows. The door of each booth is closed. The instructor and the trainee pick up their telephones. The instructor says, "You can all hear me, can't you?" The group can hear through the loud-speaker and the trainee in the other booth hears through his telephone earpiece.

The instructor continues, "Speak directly into the mouthpiece. Keep the mouth fairly close to it, like this."

He then moves the mouthpiece about $1\frac{1}{2}$ inches from his mouth and continues in the same voice, "Miss Jones (the trainee), is my voice as clear now with my mouth about $1\frac{1}{2}$ inches away from the mouthpiece?" She will answer, "No." If she does not, try the experiment again, and she will answer that it is better, close to the mouth.

The same process may be repeated with the mouth still farther away and then with the mouthpiece far down below the chin.

The second point is covered in this manner. "Miss Jones, you can see me, can't you?" She will agree. Then, "I am going to pull this shade down in my booth so that you cannot see me." (Pulls down shade.) "Can you visualize me as well now?"

Either the instructor may continue in the booth or he and the trainee may leave the booth while he explains how important it is to visualize the other person and talk as if you were addressing him face to face. Later the booths will be used with shades up and then down for all the other members of the group. When voices are stiff, the curtain may be lifted until the trainee feels at ease again.

Use of the Telephone.—In the use of the telephone, the following practices indicate expertness.

1. Answer promptly.
2. Speak directly into transmitter.
3. Don't shout. Use a well modulated, clear voice.
4. Greet the caller pleasantly.
5. Identify yourself or your company or department.
6. Visualize the other person.
7. Be attentive, listen politely, don't interrupt.
8. Use the customer's name.
9. Explain waits. "Excuse me a moment, while I look it up."
10. "Thank you" and "You're welcome" pay dividends.

11. Apologize for mistakes positively and politely.

12. Ask questions tactfully.

13. Let the customer end the call.

14. Wait for the customer to hang up first.

15. Hang up gently, just in case he is still there.

In some cases it may be necessary to call a customer to give him information. The same rules generally hold, with the following additions:

16. Be sure of the number.

17. Allow time to answer (at least five rings).

18. Be ready to talk when the person answers.

19. Ask if it is convenient to talk—"This is Mr. Smith. Have you a moment to talk now?"

There are four more procedures that will pay dividends and that should be shown to and practiced by the group.

20. Signal the operator slowly. (First, tell the customer that you are going to signal the operator. Rapid movement of the hook creates unpleasant noise and does not give time for the operator's signal light to attract her attention.)

21. If your location is noisy, cover the mouthpiece with the palm of one hand while listening. (*Covering the other ear does not help nearly so much.*)

22. Repeat all important information.

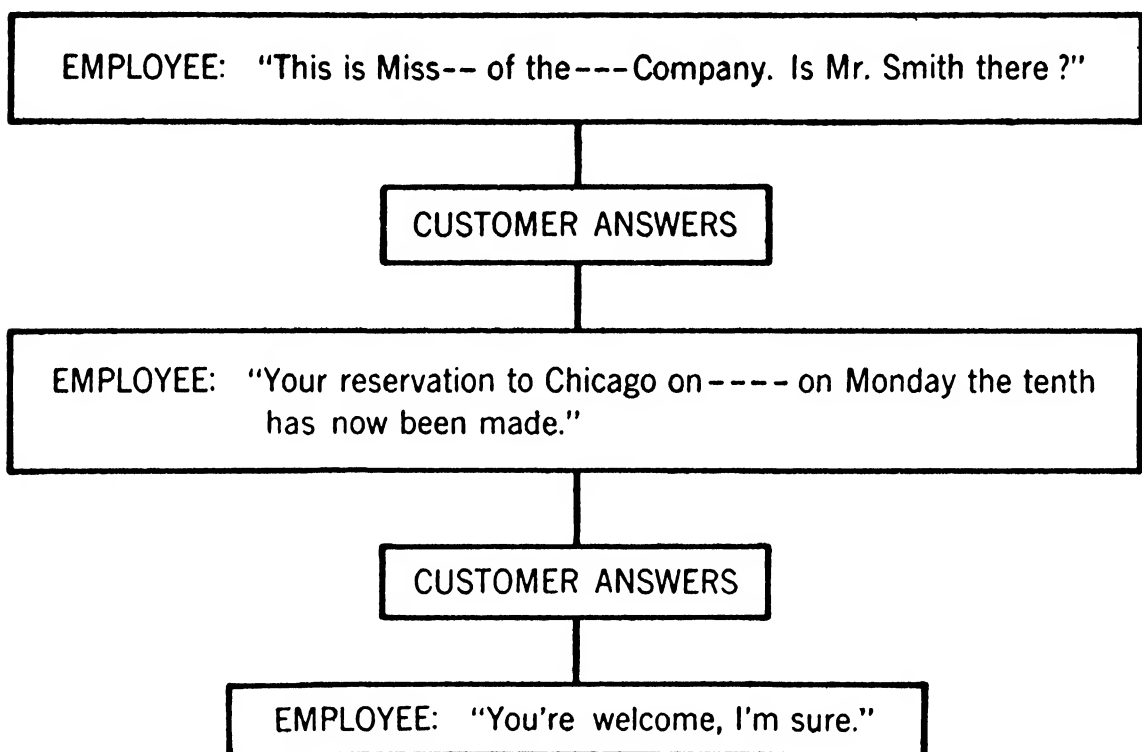23. Offer to take information when answering the telephone for another.

Diagramed Situations.—The familiarity of the trainee with telephone service forms and situations is treated in exactly the same way as in personal-service training. There is one great advantage in telephone-service work. Certain reference material can be placed in front of the worker, which would be impossible in direct face-to-face service.

Another great advantage is that the trainee can listen in on calls that are being made by an experienced worker.

This same arrangement for listening in is of great service to the instructor.   He can listen to his trainees answering their first calls and can bring to their attention suggestions for improvement.
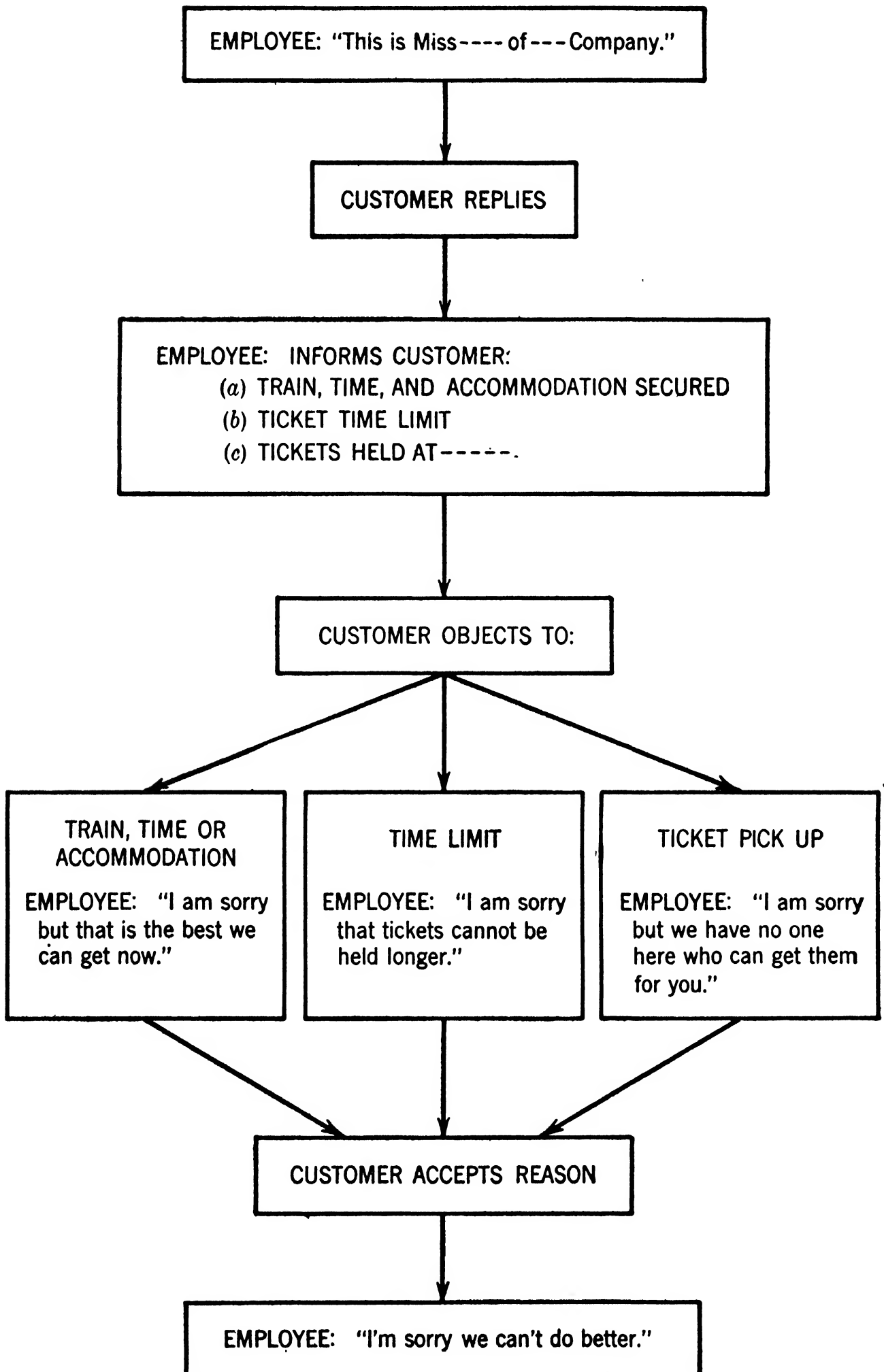
One of the handy reference charts that can be placed in front of the telephone-service trainee or the beginner is a chart diagraming the call.   One example is shown in the diagram following.

CONFIRMING RESERVATION

EMPLOYEE: "This is Miss-- of the---Company. Is Mr. Smith there ?"

CUSTOMER ANSWERS

EMPLOYEE: "Your reservation to Chicago on ---- on Monday the tenth has now been made."

CUSTOMER ANSWERS

EMPLOYEE: "You're welcome, I'm sure."

Sometimes situations may turn out differently, depending upon the customer.   The second diagramified example shows this.

These diagrams are taken (with slight rearrangement) from the New York Telephone Company's "Tone of Service Study," published for an air line in April of 1944.   They represent a great step ahead.   The same idea can be adapted to any type of service.   In some cases the diagram may have several choices and then several types of answer to each choice.   The beginner, who may be somewhat flustered, can easily follow the planned conversation.   It is a forward step toward standardized telephone handling.

SUBSITUTION FOR
RESERVATION REQUESTED

EMPLOYEE: "This is Miss ---- of --- Company."

↓

CUSTOMER REPLIES

↓

EMPLOYEE: INFORMS CUSTOMER:
(*a*) TRAIN, TIME, AND ACCOMMODATION SECURED
(*b*) TICKET TIME LIMIT
(*c*) TICKETS HELD AT -----.

↓

CUSTOMER OBJECTS TO:

TRAIN, TIME OR ACCOMMODATION	TIME LIMIT	TICKET PICK UP
EMPLOYEE: "I am sorry but that is the best we can get now."	EMPLOYEE: "I am sorry that tickets cannot be held longer."	EMPLOYEE: "I am sorry but we have no one here who can get them for you."

↓

CUSTOMER ACCEPTS REASON

↓

EMPLOYEE: "I'm sorry we can't do better."

SALES TRAINING

The general principles of service training are often applicable to various types of sales training. Just as the service representative must employ some sales technique, the salesman must employ many of the service techniques.

Perhaps one of the things that will help the average salesman more than any other one thing is Dale Carnegie's book, "How to Win Friends and Influence People." It is available also in strip film, with records that cover the material in the book. On the reverse side of each record there are examples of situations, to fix the ideas more firmly in mind. With this material are supplied a guide and the necessary forms for answering questions.

There are a number of movies that are also helpful for this type of work, such as "How to Remember Names and Faces." "How to Develop a Good Memory" is another valuable book. Both of these are referred to elsewhere in this volume. Here, again, the use of situations and the constant drilling of the sales trainee is important. Sometimes salesmen are assigned to accompany more experienced men. In many cases this is not desirable until after considerable training has been given.

The use of forms and price lists can be taught by the same method as that used in personal-service training. Acquaintance with the company and its products is largely a matter of advanced introductory training carried out in more detail. Other tactics to be used can be taught in the manner decided upon by the sales department itself.

In actually contacting the customer, whether by telephone or directly, there are certain steps that must be recognized.

Making Approach:

1. Choose the times of day that are best.
2. Command attention by looking at the customer, or by visualizing him by telephone.

Favorable Attention:

1. State your business quickly and pleasantly; go right on without hesitation.

Arousing Interest:

1. Comment on a topic known to interest the customer, such as a hobby.
2. Be dignified and avoid small talk.
3. Show genuine interest in him; let him talk; listen well.

Creating Desire:

1. Show him how buying will benefit him.
2. Show him that it is a bargain (especially interesting to women).

Overcoming Objections:

1. Disregard the competitor. Never "knock" him.
2. Don't win any argument, or you lose the sale.
3. Repeat the objection and then answer it.
4. Never be sarcastic or lose your temper.

Closing Sale:

1. Decide for the customer if you can, or
2. Narrow the field to two things, and
3. Give him a choice between two things—not between one and none.

Repeat Visits:

The more times you contact the customer, the better the chance for a sale. Customer moods and needs vary frequently.

These and the other matters mentioned can be combined to create a sales course tailored to the need of the individual company. A case method or a standard-situation method of instruction is highly advisable.

INTERVIEW TRAINING

Interviewing is important for the good will that can be created. Poor interview techniques can earn a bad name for a company and discourage the better applicants.

Interviewing can be divided into a number of steps:

1. Preliminary interview (screening)
2. Employment interview (detailed)
3. Supervisory interview (acceptance)
4. Exit interview (termination)

Here, again, "How to Win Friends and Influence People" is of value. It can furnish the backbone for a course in interviewing.

The preliminary interview is designed to screen out undesirables. It is also of benefit in turning away applicants when no jobs are being offered. Often it is of value to obtain a few obviously desirable applicants who may be wanted within a month or so, passing them along to the employment interviewer.

Training can be done by describing the type of person wanted for a position. Practice can be had by having the instructor interview trainees in front of the group. The interviewing setup should employ a desk and chairs in the conventional arrangement. Here each of the trainees can have practice on the same situation.

It is also good practice for the trainee to look over applications selected from files. Some are those of persons working for the company who are known to be good. Others have been discharged. Mixed with these can be applications from those who were not hired for specific reasons. In this way the interviewer will learn the various techniques that must be known. He will, therefore, be prevented from making poor, snap judgments.

The employment interview goes into more detail. It may be carried on in a similar manner for instruction purposes.

The interview by the supervisor is much like the other interviews. It covers specific details or technical points unfamiliar to employment interviewers. This work must be included as one part of the supervisor's course.

The exit interview is perhaps the most difficult. It should stress situations that arise at such interviews. The value of these interviews is the prevention of bad will in the employee who is leaving. It is also designed to pick up means by which it may be possible to persuade the employee to stay. Often, management or policy difficulties will be revealed. These must be passed on and their discovery is one of the reasons for the exit interview. The exact plan to be followed in the course depends greatly upon the personnel policies of a company. The course is a necessary one in industry, although it is not included in many industrial-training departments even today. It will be shown later that this is the principal responsibility of the counselor.

SUMMARY OF SERVICE AND SALES TRAINING

Personal service has to do with a job in which the worker comes face to face with the public. Good will is the chief commodity that characterizes the service when the job is done correctly.

A division is made between training for quick reference and for learning before the job. Quick reference involves training directed at rapid methods of finding printed information available on the job. Learning before the job involves training in the use of forms. It also includes those facts and figures that *must be memorized.*

Telephone-service training involves service to the public by telephone contact. A telephone is used in the training with certain standard situations. Diagramed situations are useful for beginners for quick reference to the method of answering calls.

Sales training involves case methods. Standard situations are used for the principal divisions of a sale.

1. Making approach
2. Favorable attention
3. Creating desire
4. Overcoming objections
5. Closing sale.

Interviews are divided into preliminary, employment, supervisory, and exit interviews. Case and situation methods of instruction are recommended.

QUESTIONS

1. Name two types of service to the public.
2. Why is vestibule training best for sales training?
3. What are the two ways of learning information required for ticket selling?
4. What is shown on a situation card?
5. What aid is very useful in telephone training?
6. What is the principal object of diagramed situations?
7. Name the main steps in making a sale.
8. What are the four types of interviews?
9. What is the chief commodity of service?
10. What is the case method?

PROBLEMS

1. Show the general fields of information which must be covered in training for a type of personal service that you select.

2. Set up the brief information necessary for one standard-situation card to be used in some sort of sales or service training.

3. Write a short imaginary telephone conversation, placing in parentheses before and after each step those principles of use which are to be watched or which have been illustrated by the conversation. Include at least twelve of the suggestions previously made in this chapter.

4. Diagram two simple situations that would help the telephone-service representative in two different cases.

5. Write a brief guide to making a sale of a chosen product. Indicate in parentheses the main steps illustrated.

CHAPTER IX
SUPERVISORY TRAINING

There are two main parts to supervisory training. They are

1. Methods of accomplishing the job (planning)
2. Relations between worker and supervisor (leading)

The first of these functions is one of planning the job thoroughly. In some organizations this work is handled largely by an industrial engineering department. In any organization the supervisor is directly responsible for seeing that this is accomplished. The second function is very much more difficult. The best methods in the world are useless without the cooperation of the worker.

METHODS TRAINING

The basic principles of methods training were well summarized in "Job Methods Training," which originated in the Second World War.

Like "Job Instructor Training," it was developed for the government in its war training program with industry. It will be reproduced with very slight modification.

How to Improve Job Methods

Break down the job

1. List all details exactly as done by the present method.
2. Include all

    a. Material handling
    b. Machine work
    c. Handwork

Question Every Detail

1. *Why* is it necessary?
2. *What* is its purpose?

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3. *Where* should it be done?
4. *When* should it be done?
5. *Who* is best qualified to do it?
6. *How* is the best way to do it?
7. Are materials, machines, equipment, tools, product design, work place, safety, and housekeeping satisfactory?

Develop New Methods

1. *Eliminate* unnecessary *details*.
2. *Combine details* when practical.
3. *Rearrange* for better *sequence*.
4. Simplify all unnecessary details:

   a. *Pre-position* materials, tools, and equipment at the best places in the *proper work area.*
   b. Use *gravity feed* hoppers and *drop delivery* chutes.
   c. Let *both hands* do useful work. Motions should not stop and start but be sweeping and curved. Motions should not involve reaching. Both hands can do duplicate, mirror-symmetrical work.
   d. Use *jigs and fixtures* instead of hands *for holding* work.

5. *Work out* your ideas *with others.*
6. *Write up* your proposed *new method.*

Apply the New Method

1. *Sell* your proposal to your supervisor.
2. *Sell* the new method to the other workers.
3. *Get final approval* of all concerned on safety, quality, quantity, and cost.
4. *Put the new method to work* until a better way is developed.
5. *Give credit where* credit is *due.*

There is little more to be said about this outline. It describes a successful method. Each training department will want to add this in its own special way to the supervisor's course. It is only one element in the training of a supervisor.

RELATIONS TRAINING

The second main part of supervisory training covers the desired relationship between the worker and his supervisor.

A great deal has been written on this subject. The third and last of the government-sponsored courses of the Second World War gives a good outline of this problem. It is here arranged with some changes and additions. It is in outline form, for guidance in placing the material in a supervisory course. It was titled "Job Relations Training."

How to Improve Job Relations

Foundation of Good Results

1. Let each worker know how he is getting along.
2. Give credit generously where it is due.
3. Tell workers in advance of changes that will affect them.
4. Make the best use of each person's ability, giving him all the responsibility he can take.

Treating People as Individuals

1. Make workers feel like individuals—not like machines.
2. Know what special things are important to each worker.
3. Play no favorites; treat all equally well, firmly, and fairly

Handling Problems

1. Get the facts.

   a. Be sure that you have the whole story.
   b. Be sure that you have both sides of the story.

2. Weigh and decide.

   a. The full facts often indicate a clear answer, but consider other possible answers.
   b. Jumping to conclusions is very dangerous.

3. Take action.

   a. Don't pass the buck.
   b. Ask *your* supervisor's opinion of your conclusion.
   c. Take the necessary action promptly. If discipline is required, announce your conclusion to him alone and not in the presence of others.

4. Check results.

   a. See that you have obtained the desired result.
   b. If not, review the whole matter again and act.

CASE STUDIES

One excellent method for bringing out the results desired in training is to set up a number of problems that can be solved by the group taking the course. During the discussion almost every point will come out, be it a problem in methods or one in relations.

ORGANIZATION TRAINING

As another part of the supervisor's course, the subject of good organization must be covered. The American Management Association recently published a list of points important in good organization. This list has been reworded here. Four points, which are believed to be very important, have been added at the end.

1. Assign definite and clean-cut responsibilities.
2. Couple responsibility with equal authority.
3. Inform all concerned of any changes in responsibility or authority before making such a change.
4. No person should receive orders from more than one source.
5. Give orders only to *your direct subordinates.*
6. Criticism should always be made privately, unless safety at the moment is involved.
7. No dispute between supervisors or workers as to responsibility or authority is too trivial for prompt settlement.
8. Promotions, wage changes, and disciplinary action should always be approved by the *one* supervisor immediately above another supervisor.
9. No person should be both the assistant to a supervisor and the inspector of his work.
10. Any person subject to regular inspection should also be allowed the persons and facilities necessary to maintain an independent check of his work.
11. Each person should be informed of the reasons for his work.
12. Each person should be periodically informed of his performance.
13. Each person must be informed immediately of changes in pay and deduction.
14. Every supervisor should accept suggestions positively—never negatively by immediate objections.

Belief	Cause	Solution
Supervisor (thus management) does not treat worker as a partner and an equal	Not taking workers into consideration because supervisor is too busy with his own work	Spend more time on the job with worker Keep him informed on reasons for his work Keep him informed about his performance
Too much red tape and accounting	Lack of methods engineering	Methods engineering Keep him informed on reasons for his work
Improper planning of work	Lack of methods engineering appreciation by supervisors	Training supervisors in appreciation of the principles of methods engineering Keep him informed on reasons for his work
Promotion is difficult and unfair	Not informing workers honestly as to their actual ability	Keep him informed about his performance
Suggestions are not used or noticed	Failure to acknowledge suggestions and quickly. Telling worker why his suggestion cannot be used instead of praising it first, explaining afterward and praising it again (whether it can be used or not)	Accept suggestions positively—never negatively
Unfair salary deductions	Not explaining adequately	Keep him informed about his pay and deductions as much in advance as possible
Pay not consistent with that of others	Lack of internal and external consistency in some cases	Keep him informed about his pay and deductions
Foremen are neglected	Their supervisors lack confidence in them—shown by continual questioning. The foreman thus defends his position, which aggravates the situation. Weaknesses of the foreman's arguments are emphasized to the exclusion of praising his strong points	Keep him informed about reasons for his work Keep him informed about his performance Accept suggestions positively—never negatively

Belief	Cause	Solution
Supervisors are incompetent and unfair	Insufficient attention to worker. Lack of training	Keep him informed about reasons for his work Keep him informed about his performance Accept suggestions positively—never negatively
Unions are unfair	Dues and union rules	Proper explanation to the worker as to reasons for dues and rules by the union
Management does not cooperate with the unions	Disagreeements during cooperative bargaining, due to misunderstanding of common problems	Equal financial responsibilities Keep him informed about his pay and deductions Accept suggestions positively—never negatively
Poor employee facilities	Supervisors' rest rooms, dining rooms, etc.	Both use same facilities
Workers not kept informed as well as public	The company worrying more about the public's reaction than the employees' reaction to unfavorable performance by the company	Keep him informed about reasons for his work Accept suggestions positively—never negatively
Summary: Management and labor are, too evidently, separate groups	Lack of understanding that a supervisor is a worker too	Whenever you oil the machinery of management, save an equal amount of oil for the machinery of employee-management relations Keep him informed about reasons for his work Keep him informed about his performance Keep him informed about his pay and deductions Accept suggestions positively—never negatively

WORKER COMPLAINTS

In a recent survey, *The Reader's Digest* found a number of complaints of workers. These same complaints have been reworded and further subdivided in the order of importance as shown on pages 119 and 120. The most important come first. To each has been added an opinion as to the cause and an opinion as to the solution. This material is of importance in supervisory training.

OTHER SUPERVISORY TRAINING

One last point should be mentioned. Certain legal restrictions often make it impossible to give workers supervisory training. They may be trained in some of the principles but not in functions that are management's responsibility. Thus, the handling of grievances, methods of pay, rating of employees, and the like, are not supposed to be taught to other than supervisors. This restriction, when it exists, is perfectly proper and should be recognized.

"How to Supervise People," by Alfred M. Cooper, is an excellent book to use in connection with supervisory training. The last part of the book is especially valuable.

There are dozens of items that can be covered in supervisory training. Certainly this training should be continued at reasonable intervals. Among the best examples of the various subjects that can be covered, perhaps, are the subjects used by General Motors in an executive training program. Not all of these subjects are given in any one course. Some are given at one time, others later. The list, nevertheless, is so complete that it will be reproduced here.

Management and the Executive Job

1. The place of management in modern industry
2. Principles of efficient organization
3. Analysis of the executive job

Planning

    1. Planning in an industrial enterprise
    2. Planning in the department
    3. The development of planning ability

Quality Control and Waste Elimination

    1. The control of quality
    2. The control of scrap
    3. The control of waste
    4. What is inspection?
    5. The inspection and salvage departments

Equipment

    1. The fundamentals of equipment control
    2. Tool control
    3. The tool and maintenance departments

Building and Maintaining the Organization

    1. Building the department organization
    2. The personnel department
    3. The control of labor turnover
    4. Proper supervision

Principles of Handling Men

    1. Personnel relations in industry—historical evolution
    2. Dealing with men—individual differences
    3. Dealing with men—human motives and desires
    4. Dealing with men—influence of the group
    5. Dealing with men—problems in human behavior
    6. Dealing with men—intelligence and training
    7. Handling men—getting along with people
    8. Handling men—difficulties with subordinates
    9. Handling men—giving and receiving orders
    10. Incentives—employee morale and morale control
    11. Securing cooperation
    12. Judging and rating men

Employee Relations

    1. The background of employee representation
    2. Types and objectives of employee representation

3. Results obtained with employee-representation plans
4. Plans of employee representation
5. The executive's relationship in employee-representation plans

Incentives

1. Wages
2. The relation of the executive to wage questions

Policies

1. The executive and company policies

Safety

1. The safety program
2. The problem of workmen's compensation

Job Study

1. The methods-of-work department
2. Principles of job study
3. Methods of applying training

Housekeeping

1. Industrial housekeeping

Fundamentals of Economics

1. Development of economic organization
2. Modern economic organization
3. Elements of economics

Financial Organization and Control of Business

1. Invested capital
2. Borrowed capital
3. Financial analysis

Budgets

1. Business conditions
2. Forecasting
3. Departmental budgets

Departmental Cost Control Methods

1. Departmental cost reports
2. Direct materials cost
3. Direct labor cost
4. Departmental expenses
5. General overhead

Personal Characteristics

1. Personal analysis

General

1. The requirements of modern industrial leadership

SUMMARY OF SUPERVISORY TRAINING

The supervisor must be trained in methods. This involves the following steps:

1. Break down the job
2. Question every detail
3. Develop new method
4. Apply new method

The next step is relations training, which shows the supervisor how to get along with the worker. It includes

1. Foundations for good results
2. Treating people as individuals
3. Handling problems

Organization training is essential to prevent "going around end" and to show the lines of authority and responsibility.

Worker complaints are listed, with suggested reasons for the complaint and suggested solutions.

A list of the many topics that form a reservoir for continued periodical supervisory training is shown.

QUESTIONS

1. What are the two main parts of supervisory training?
2. Name the four main steps in job-relations training.
3. What are the four main parts of handling problems in job-relations training?

4. Which of the fourteen points for good organization is most frequently abused? Explain in a few words, to indicate your reason.

5. What is the chief reason for unjust complaints over salary deductions?

6. What is one important reason for workers' thinking supervisors unfair?

7. How can supervisors protect themselves against comments as to unfair promotions?

8. What can be covered, by subject, under a planning course?

9. What is there to know about budgets in a course?

10. Name two subjects important in a course on handling men.

PROBLEMS

1. Take some actual job and list its present steps in detail.

2. Break this job into parts and question every detail.

3. In outline form suggest a new method for doing this job.

4. State some problem that you have experienced in handling another person.

5. Give the solution to the problem that you used, or one that you think would have been better than the method you used.

CHAPTER X
EXAMINATIONS AND RECOGNITION

The purpose of examinations is to assure that the instructor has taught. It has been stated before that "if the worker has not learned, the instructor has not taught." There are a great many examination types. Many of these the instructor can word so that the entire group will get by; or he can so word them that too many in the group will be eliminated. Unfortunately, much industrial training is based on the premise that everyone will get by, because "we can't afford to lose the men." This is as great a mistake as is the elimination of too many.

WHERE TO DRAW THE LINE

Public schools have to accept all comers. Industries do not have to accept those who show up as unsatisfactory during interview and testing. The industrial-training unit must accept all who have passed the original interview requirements. How many of these can complete training?

One quick answer to this is that about 10 per cent should fail. In the average group of ten, one will be unsatisfactory. If this is followed, the final examination would be changed in difficulty until one in ten failed. If the instruction were poor, this would call for a foolishly easy examination. However, the answer in industrial training is that the training and the examinations should finally result in not more than 5 per cent failing later, in work. This should be true, whether 1 per cent or 20 per cent fail in training.

Thus, it is very necessary that examinations be set as the barrier. If there are poor instructors, the number failing in the industrial-training unit will increase with an

examination of standard difficulty. This must again be traced back, to make sure that something has not happened in the interviewing, so that substandard groups are being hired. This subject will be treated in Chap. XI, on Follow-up. Enough has been said to show the necessity for standard examinations of uniform difficulty.

TYPES OF EXAMINATION QUESTIONS

Instead of undertaking to treat all the known types of examination, it has seemed more advisable to select the five types that are most often used. These are, also, the five most worth-while types. They are

1. True-false
2. Multiple choice
3. Essay
4. Fill-in
5. Performance

In each of these types it is possible to give either an "open-book" or a "closed-book" examination. As far as industrial training is concerned, it is probably best to allow reference to any material that is used for that same purpose on the job. Thus, there is little point in testing a ticket clerk on times of arrival and departure. He has a timetable for this purpose. There is a real necessity for testing his ability to fill out a standard ticket form without wasting time in finding out how to do it. Thus, reasonable reference material should be provided. All examinations should be timed. The purpose of timing is to assure that sufficient speed has been developed to undertake a job in the normal manner required of the new worker.

Each type of examination can now be discussed.

True-false Questions.—Is the earth essentially a sphere? True (✓) False ( )

The true-false examination is fairly easy to construct. It is also exceptionally easy to grade. It has one cardinal fault. This is its utter failure to continue the training

process during the final examination. If a correct answer is the result of guessing, this fact is unknown to either the worker or the instructor. If the answer is wrong, the worker has no advantage in knowing this. Loss of credit alone will not teach him the same fact for later use.

A true-false examination should have approximately as many questions true as false. It is possible to get a grade of 50 per cent correct without knowing anything about the material. Thus, the normal method of scoring such examinations is to subtract the number of wrong answers from the number of right ones. Then a pure guess will net a 0 per cent grade.

This type of examination is quite popular, because it saves the instructor trouble. It has few merits other than that it can be quickly taken. The trainee will often argue about the answer, unless all questions are undeniably true or false. This makes the type of question still less valuable, for marginal questions cannot be asked.

Questions of this type are, nevertheless, valuable in certain testing of reaction to *situations*, where no training has been given.

Multiple-choice Questions.—The earth is one of the following:

( ) 1. Essentially round
( ) 2. A sphere
(✓) 3. An oblate spheroid
( ) 4. Square with rounded corners

Study of the answers will indicate that answer 1 is a play on the common expression that "the earth is round," in distinction to its being a sphere of some sort. Answer 2 is essentially correct, but not the right answer. Answer 4 is obviously silly. This analysis gives the first indication of a basic fault in multiple-choice examination questions. Either the choices are so close that the difference is not of industrial importance, or the choices are so ridiculous that they are not of any importance.

The second disadvantage is that the answer may be simply recognized. The person being examined may have completely forgotten the answer, but upon seeing "oblate spheroid" he says, "Oh, sure, I know now." Recognition has its value, but memory of the correct answer is more significant.

These questions are harder to make up than are the true-false questions, but they are almost as easy to grade. If there are three choices, it is possible to receive 33 per cent by guess alone; if there are four, 25 per cent; if there are five, 20 per cent.

Another serious fault is the possibility of the trainee's marking and then remembering a wrong answer. Such questions are of more value in certain testing which has been merely preceded by the person's general experience.

Essay Questions.—Describe the general shape of the earth. *Ans.:* The earth is much the shape of an apple. It is not perfect in its shape, owing to mountain ranges and other irregularities on its surface.

True, the question was easy to write. Neither the word "sphere" nor the words "oblate spheroid" appeared. It is exceedingly hard to give the answer zero credit. It is exceedingly hard to read the handwriting of the poor student. Essay-type questions require considerable time for answering.

The essay type has little to recommend it for most industrial examinations. There are some uses for it in more advanced training in cases where the instructor is interested in gauging the ability of the person to put his thoughts into clear words.

Fill-in Questions.—The earth is ____spherical____ in shape. Or, What is the shape of the earth? *Ans.:*____A sphere____

This type of question can be constructed in either way. Perhaps the second method is the better. A short line is left for a word or two giving an answer. In this case, if

either "a sphere" or "an oblate spheroid" will count as a satisfactory answer, full credit may be given.

Recognition will not help here, as, within the question itself, there is little clue to the answer. It is unlikely, besides, that a guess will help very much.

Such questions are easy to construct and are fairly easy to grade. They may even be graded by inexperienced persons after the instructor has decided upon one or more acceptable answers. Usually, scoring will not be contested.

Most questions that require numerical answers are of this type. Here, again, 3.1 and 3.145 may be equally acceptable answers to a mathematical problem. This depends upon the accuracy or the limit to accuracy indicated on the examination.

This type of question seems admirably adapted to most training courses. Its principal disadvantage is that answers can very easily be copied from a neighbor. The solution to this difficulty is to have two sets of questions, which can be distributed to persons seated alternately. To save this extra effort, it is easy to distribute one page at a time to each person, but to distribute page 1 to one person and page 2 to the next, so that adjacent neighbors are working on different pages at any one time. With proper monitoring and seating, however, even this precaution is not required.

Performance Questions.—In this type of examination, the trainee is set to perform a given task. He must show that he can complete it satisfactorily in a given time. Sometimes his grade depends upon both the time and the accuracy of the job. This type of examination (wherever it is practical) is greatly superior to any of the other types. In many types of instruction, it may be easier and still adequate to give the paper-and-pencil type of examination.

LEADING UP TO THE FINAL EXAMINATION

It is manifestly unfair at the completion of a course to give an examination of a type that no trainee has seen

before. It is much better to give a number of short quizzes made up in a manner similar to that to be used in the final examination. Each such examination should be gone over carefully with the group. Such quizzes give excellent statistical results to the instructor. Often a particular subject will have been missed by a considerable number of the group. That is the cue for going back over that work and for reexamining, too.

Too often the final examination constitutes the last session of the group. Unless it is, in itself, an actual demonstration, this final examination should be given before the last session is held. Then it can be thoroughly explained to the group and used as a learning tool. Certainly no small inaccuracy in demonstration should be allowed to pass that can be corrected during the examination time.

No successful training program omits a final examination.

GRADING

It has been shown previously that the use of the simple numbers from 0 to 4 is an advantageous scheme for grading. The meaning of these grades will be repeated here.

Meaning	Grade	Percentage of group	Percentage	Percentile	Letter
Outstanding	4	7	90 to 100	97	A
Above average	3	24	80 to 89	83	B
Average	2	38	70 to 79	50	C
Below average	1	24	60 to 69	17	D
Unsatisfactory	0	7	Below 60	3	E or F

Percentage of group hardly constitutes a scoring method, nor does percentile. Percentage gives an answer in two figures that measures within 1 per cent, or attempts to do so. For this reason, the simplicity of the single-number system seems preferable.

Let it be supposed that an examination has forty questions. Obviously, each question is worth .1 or *one tenth* point. The sum of all correct gives 4 as the answer. If half are correct, the answer is 2. This examination would have to be extremely difficult if the average person would be expected to get only half the answers. For this reason, examinations are usually set so that either 60 or 70 per cent is just satisfactory.

It is usually best to score an examination in straight percentage and then convert the answer to the simple single figure. The conversion depends on the lowest satisfactory grade. Thus, with ten questions, each is worth 10 per cent. If it is believed that about 7 per cent of the group will usually fail, the examination should be made just hard enough for this to occur on the average. If after some experience the examination is geared to ·a 60 passing, the table just shown will easily convert the grades. Here is an example of the conversion of unit grades to a final grade.

First quiz................	3
Second quiz..............	2
Homework...............	4
Classwork...............	1
Final examination.........	2
	5/12
Course grade.............	2.4 (or 2, if desired)

If the decimal were .5 (to .9), the average would be the next whole number. Thus, an average of 3.5 gives a whole grade of 4. For final course grades, the first decimal point may be retained, if desired.

In many cases the instructor may feel that the final examination is far more important than are the other grades. This can be taken care of easily by multiplying that grade by any number desired. In the case above, suppose that the instructor decided that this grade was as important as any other four grades. The average is made in this way, using the same grades as before.

	First quiz...................	3
	Second quiz..............	2
	Homework...............	4
	Classwork.................	1
(4x)	Final examination.........	8
		8/18
	Course grade.............	2.2 (or 2, if desired)

Here the final was counted as four grades and so was multiplied by 4 before being added to the others. The result in this case made little difference. If it had been very high or very low, in comparison to the other grades, the effect would have been more marked.

The advantage of recording, inspecting, transferring, and averaging single-number grades is not to be lightly dismissed. Much work can be saved, and accuracy is still within the limits of usual measurement.

RECOGNITION

There are a number of ways of recognizing the worker who does especially well in examination, or, more important, in all his training work. Some of these are

1. A special certificate differing from the standard certificate. This may be a diploma, a grade card, or both.
2. A monetary prize
3. A slightly increased wage
4. A posting of grades
5. A refund for costs incurred in training

All these and many more may be used; but the effect on the remainder of the group must be reckoned. If others become discouraged, they may give training a bad name or, worse, become dissatisfied employees. Perhaps the best way to achieve the advantages without the disadvantage is to place some special mark on a certificate showing better than normal accomplishment. The grade alone may do this. Carrying out others of these suggestions

may spoil the worker or spoil those with whom he learned the job.

Certainly, all who do satisfactory work should have something to show for it—either a certificate or pay. It would be best for those who do not attain to the minimum standard to be eliminated before they complete the course. Their reaction will then be removed from the group. If none ever fails, the word will get around and training will suffer.

It is believed best to give some recognition to outstanding work during training. Give all who complete a course recognition and plenty of it. Eliminate entirely those who fail. In initial training this is easy. In later training those who fail, although they can retain their old jobs, present a serious problem. Certainly there should be fewer failures in advanced training. Supervisors are responsible for those entering advanced training. They should have satisfactory work records. One solution for this last problem is to drop the unsatisfactory trainee early in the course. There will be resentment, but much less than there would be later, for the dropped trainee can always say, "If they had let me continue, I would have gotten through, I know." By all means, let him keep this idea in mind and do nothing to discourage him further. Wounded pride is not so bad as a broken spirit.

SUMMARY OF EXAMINATIONS AND RECOGNITION

It is recommended that fill-in and performance-type examinations be given. Short quizzes should be given, to familiarize the trainee with methods of taking examinations. A final examination should be required in every course.

A grading system using the 0 to 4 system is outlined and is consistent with the test grading shown in earlier chapters.

Recognition is important. Certificates and cards are recommended, along with pay-rate advance at the successful termination of the course.

Unsatisfactory trainees should be dropped prior to the end of a course.

QUESTIONS

1. What are five types of examination question?
2. Name two disadvantages of a multiple-choice question.
3. Give one advantage of a true-false question.
4. What is the principal fault of an essay question?
5. What is the principal difference between a fill-in question and an essay question?
6. What type of question would you term a simple arithmetic problem?
7. What does a performance question require for a satisfactory answer?
8. A mark of *C* means what?
9. A percentage grade of 75 is about what single-number grade?
10. Name two good methods of recognition.

PROBLEMS

1. Ask a question in all five forms of written question.
2. State another question in these same five forms.
3. State still a third question in all five ways.
4. Average the following grades to the nearest tenth unit, 3, 4, 2, 3, 2, 1, 3.
5. Average the same grades, assuming that the fourth grade carries double weight and the last grade carries triple weight.

WORK REVIEW

Work review has often been called "rating." It is the process of periodically reviewing the performance and personality of the worker or the supervisor. In previous chapters performance and personality have been broken down into groups for interviewing and testing. So that the ultimate goal can be reached, this same arrangement should also be used for review. This goal is the selection and training of the worker to do a good job—and to continue doing it.

EVOLUTION OF REVIEW SHEETS

The evolution of rating and review sheets can be shown by taking one characteristic of work. This characteristic will be *quality*.

The oldest method is the word-of-mouth opinion:

1. "Yeah, Joe does a pretty good job."

The next method was the simple question on a sheet:

2. "Is quality satisfactory?" Yes__√__No_____

Following this was an attempt to be more specific:

3. Work quality: Poor_____Average__√__Good_____

Weighted scales were then employed, as it was known that there was a tendency to be lenient in grading. The supervisor seemed to have more satisfactory men until weighting was added.

4. Consider the quality of work of the man in relation to the rest of his group and to those standards which require proper workmanship:

Very poor		Poor		Average		Good		Excellent	
0	1	3	6	√ 10	15	25	40	60	100

While this was much better, it attempted to break the characteristic of quality down to too fine a point. Also, it did not define what constituted poor and excellent quality. A supervisor will not rate his workers much below the poor point, for that merely means he should have discharged them and has not done so.

The next step in the evolution was to reduce the number of points for scoring to about five and to add some adjectives that better describe the quality of work.

5. Quality

inaccurate	below average	usually satisfactory	above average	very neat

There are two characteristics of quality. One refers to the finished product—accuracy. The other refers to the work and the work place—neatness. Good housekeeping reflects in the quality of work.

An attempt was then made to reduce the grading to a number and to define exactly what was meant by using different adjectives to describe each level of quality.

6. Quality	0	1	2	3	4
Accuracy			√		
	Very careless	Frequent errors	Normal mistakes	Usually accurate	Very exact
Neatness				√	
	Slovenly	Untidy	Passable	Neat— poor house- keeping	Neat— good house- keeping

The supervisor needs merely to check one space on each line. If "normal mistakes" and "neat-poor housekeeping" were the two items checked, these are immediately converted to 2 and 3, respectively.

It is possible to use the scheme suggested before in making 2.5 to a grade of 3. As more than one characteristic will usually enter into any one grade average, it will

be helpful later to show a little greater discrimination than has been used between the single-unit grades.   This may be shown in either of two ways.   One method is as follows:

Decimal after unit	Method	Examples
.9, .0 and .1	Use the nearest unit	1.9 is 2
		2.1 is 2
.2 and .3	Use one-quarter	3.3 is 3¼
.4, .5 and .6	Use one half	2.4 is 2½
.7 and .8	Use three-quarters	1.8 is 1¾

The other method is this:

Decimal after unit	Method	Examples
.9, .0 and .1	Use the nearest unit	3.9 is 4
.2, .3 and .4	Use a plus (+)	2.3 is 2+
.5, .6, .7 and .8	Use the next highest unit with a minus (−)	3.8 is 4 −

The second method is quite easy and is accurate enough. It is accurate enough to tell on which side of the unit the grade appears.   Thus, if a person had an average of 2 on one review (where only units are used) and of 3 on the next, it might have been that he actually changed from 2+ to 3−, which is a *small* change.   On the other hand, if using only a single unit, he might have changed from 2− to 3+, which is a very *large* change.   Thus, on review sheets, the plus and the minus will be used.

This last scheme of grading might be slightly rearranged on a sheet such as that shown on page 139, which is the last in the evolutionary process to be considered here.

Two things have been added: (1) two small boxes on the left; (2) a column for remarks, where the reviewer wishes further to qualify his check mark.

The upper box in each characteristic shows the minimum requirement for *each particular job*.   Of the five character-

PERFORMANCE

Group	Score	Factor	0	1	2	3	4	Remarks
Quality	3	Accuracy	Very careless	Frequent errors	Normal mistakes ✓	Usually accurate	Very exact	
Quality	3—	Neatness	Slovenly	Untidy	Passable	Neat—poor housekeeping ✓	Neat—good housekeeping	
Vol.	2	Volume produced	Very low output	Below standard	Required amount ✓	High in spurts	High quantity	
Knowledge of Job	2	Basic knowledge	Needs training badly	Weak on fundamentals	Enough for job	Well-informed ✓	Inventive	
Knowledge of Job	2	Equipment	Needs help often	Partial knowledge	Sufficient to operate	Can operate well ✓	Knows and can repair	
Knowledge of Job	2+	Versatility	Can learn few jobs	Slow to adjust	Skillful present job	Adept several jobs	Skilled in many jobs	
Knowledge of Job		Company and department regulation and policies	Faulty information	Knows few—Can't find ✓	Familiar with sources	Usually posted	Accurately informed	
Attendance		Use of time	Dawdles	Wastes time daily	Usually on job	Always occupied ✓	Extremely busy	
Attendance	3	Punctuality	Always late	Irregular arrival	Usually prompt	On time on job ✓	On time for everything	
Attendance	3	Illness	Frequent absence	Habitual poor health	Some absence, colds, etc.	Seldom out ✓	Never sick	
Attendance		Absence (personal)	Frequent absence	Habitual excuses	Occasional	Seldom out ✓	Never absent	
Safe	3	Safety	Hazard to others	Few accidents	Safe worker ✓	Safe and safety minded	Safe—protects others	
Safe	2							

(Work review adjustment has not been made—Adjustment is described later in this chapter.)

istics shown here, the requirements are 3, 2, 2, 3 and 3, respectively. The particular man being reviewed was equal to all, as is shown in the lower box, except for safety, which was one grade lower than required. This is cause for some concern. It indicates that training, or at least a specific discussion with the worker, is indicated. On the other hand, the worker may well exceed the requirement in many places. This shows immediately that this worker should be capable of advancement.

Thus, a modern review sheet should be used to the advantage of the person being reviewed more than for finding fault.

It will be shown in a later chapter how these results may be quickly compared with test and training results. An over-all picture of the worker may be gained in this manner.

REVIEW METHODS

The reasonable ideal is to have three supervisors review each person separately. In some cases there may not be three who are qualified to do this; only two or even one may be available. Usually, however, there will be three who know enough about the worker or the supervisor to review his record. It is very important that all who make out such a review should be carefully instructed in the use of it. Under no condition should personal feelings enter the checking. They will enter to some extent, but good supervisors will know enough to discredit this.

Another very important point is that the supervisor should not mark any line where he does not know enough to give a proper check. This will immediately indicate to the supervisor that there are some things he should find out about the person being reviewed. The next time he will be in a better position to review thoroughly. This feature alone is of great assistance in the self-training of supervisors.

The other advantage of review for the supervisor is that he will find those points in which he can aid the worker in

the future. There are other advantages, which will be discussed later. These include an actual check among the three review grades. A supervisor should be checked if he is in great disagreement with two others. Also, the advantage of these sheets to the worker is not insignificant. It shows him where he stands, points out how he can (but only if *he* wants to) improve himself, and indicates his chances for later promotion.

Halo Effect.—It is sometimes found that a supervisor believes someone to be especially good or bad in one characteristic. He then tends to carry the same idea throughout other characteristics. This is called the "halo effect"—*i.e.*, the man is all good or all bad. The use of review sheets will tend to break down this habit, because they ask for more concrete answers. Merely checking workers as satisfactory or unsatisfactory, on earlier review systems, was found to be inaccurate.

PERFORMANCE REVIEW

Performance review is one-half of the review sheet. Before going on to the remainder of the sheet, it is well to show how each characteristic should be judged.

Quality.—Quality has been shown to be broken down into two subcharacteristics.

Accuracy should be judged by spoilage and appearance of the product with relation to the standard desired. Some workers will consistently produce a product that just meets the inspection standards. Others will always exceed the standard. If the volume of the work is too low, it may be that too much time is being spent in exceeding the standard. There are some workers who will exceed in accuracy as well as in volume.

Neatness is related to quality, for an exceedingly well-run machine or assembly position is usually reflected in the quality of the product. Further, poor housekeeping detracts from the appearance of the department and invites criticism. Management will often object to the

quality of the product if it is produced in a poorly kept shop. Certainly time is saved in an orderly, clean shop.

Volume Produced.—Volume is usually easy to measure. Its relation to accuracy in quality has been discussed. Here, again, the volume must be related to spoilage. A high volume with spoilage does not pay; so volume and quality are very closely related. If the volume is high, the worker should get credit for it. If spoilage is high, his accuracy and neatness are subject to criticism. It may be that the only way to improve the worker in reduction of spoilage is by praising him sufficiently on his high-volume output. It is understood that spoiled items are not considered in volume produced. Only those which are acceptable are considered to be real volume.

Knowledge of the Job.—This characteristic is broken down into four elements—Basic Knowledge, Equipment, Versatility, and Policy Knowledge.

Basic Knowledge depends on the type of job. A stenographer has basic knowledge of the usual methods of addressing, spelling, paragraphing, etc. These are the fundamentals that are specific in her job. An engineer must know physics, mechanics, etc., as well as certain specialized information in his field.

Equipment refers to the knowledge of the devices that the worker must operate. The stenographer must know her typewriter and the mechanics of cleaning, changing ribbons, setting of tabs, and the like. The engineer must know the machinery that he designs or corrects. He must know testing and test instruments.

Versatility refers to knowledge of the many means for doing a job with the materials at hand. It also is concerned with the amount of knowledge about allied or other fields. A punch-press operator who can run only one machine is not versatile. If he can operate any kind of punch press, a lathe, and other machinery, he is versatile. If he also knows the handling of men, he is still more versatile.

Company and Department Regulations and Policies are essential to the proper carrying out of many jobs. This is especially true for the worker who is also a supervisor. Sometimes these policies and regulations are not available to the worker. He should be reviewed on the basis of those policies to which he has access and not of those which merely exist in the minds of others.

Attendance.—Attendance is divided into four main parts: Use of Time, Punctuality, Illness, and Absence (personal).

Use of Time relates to what is done on the job while the person is there. An expert worker may be able to meet the quality and volume standards and still have time to waste. If this time is actually put to some constructive advantage for him or for the company, that is most creditable. If not, his mere attendance is not a real advantage.

Punctuality has two aspects. The first of these is concerned with arrival and departure from work. If the worker is on the job when the working day starts and leaves the job itself when the working day stops, he is doing his job properly. If he arrives late and then works a little after quitting time, he is not punctual. Modern business is run by a number of people and all must be there at the same time. The second aspect has to do with arrival on time for meetings, having the job done when it is scheduled to be done, and so forth. Both aspects are important and are weighed together in the heading, Punctuality.

Illness relates to the direct health of the worker or supervisor. If illness is chronic, the company should certainly look into it. Otherwise, the worker may be permanently invalided. Much illness relates to the job, although some does not. If an office worker is in poor health, it may be possible to transfer him to some more healthful occupation. It also may be possible to convince him that his home habits, such as lack of sleep, are affecting

his work. He will be of little further use to himself or to his company if he continues bad habits.

Safety.—There are two kinds of safety. One relates to the person himself. The other relates to his fellow workers. In some office jobs the safety requirement may be very low. A grade of 1 may be sufficient. Other jobs may require a grade of 4, where, by carelessness, the person can do great damage to himself, to his machine, or, especially, to others.

If a worker is jeopardizing safety, he should be assigned to a safety class. A part of any safety training may include a trip to a hospital. In this way the results of unsafe practices can be brought forcibly to the attention of the worker or the supervisor. A rude shock such as this may be distasteful, but a severe injury in the shop may otherwise occur, as a result of neglect of safety.

PERSONALITY REVIEW

The qualities of personality can be reviewed in the same manner as those of performance. The legality of such reviews for nonsupervisory workers should be investigated carefully and will depend on laws then in effect. Personality records may always be kept, however. They may be used as a selecting medium for supervisors and for advancement to supervisory ranks. Some laws do not allow such a part of the review to be used directly with the nonsupervisory worker. The claim is made that their job is to produce a certain quality and volume, to know their job, to be there, and to do the job safely. In this assumption it is not proper to hold the worker responsible for his personal behavior and attitude as long as it is definitely within recognized limits of obedience.

The personality characteristics include

1. Job Interest
2. Intelligence
3. Social Intelligence
4. Leadership

5. Planning
6. Drive
7. Follow-through

The method of checking is exactly the same as that for performance. The breakdown of the characteristics will be given for each item. A sample personality review sheet follows.

Job Interest.—There are three subdivisions of Job Interest. These are Enthusiasm, Useful Initiative, and Concentration. Each relates directly to Job Interest.

Enthusiasm describes the energy of the person. It may sometimes interfere with the performance of jobs. The worker should, nevertheless, receive credit for enthusiasm and energy. If the worker lets his enthusiasm run away with him to the neglect of the job, it is not the quality of enthusiasm that should be criticized. It is something to be praised to offset the criticism that its misuse may have earned.

Useful Initiative has to do with the self-starting qualities of the worker. It certainly does not relate to finding jobs that are not of benefit to the department or the company. Very enthusiastic persons have a habit of starting many things, including trouble, which are not related to their responsibilities. Useful initiative will often make the worker very valuable. This is especially true of supervisory work.

Concentration is a valuable quality. It is also a characteristic that is very hard to learn when it is lacking. It does not necessarily go hand in hand with enthusiasm.

Intelligence.—There are four characteristics of Intelligence. The four relate to Judgment, Abstract Reasoning, Learning, and Observation.

Judgment relates to using common sense in meeting situations. It ranges from being misled to sound judgment based on the facts of any case. Judgment is important in any job and, most especially, in supervisory work.

PERSONALITY

	0	1	2	3	4	Remarks
Enthusiasm	Indifferent	Slow to excite (✓)	Properly interested	Eager to attack job	Absorbed interest	
Useful initiative	Can't start any job	Slow to get under way (✓)	Attacks new jobs	Self-starter	Initiates and starts jobs	
Concentration	Easily interrupted	Often sidetracked	Satisfactory concentration	Hard to mislead	Absorbed attention (✓)	
Judgment	Easily misled	Jumps to conclusions	Average analysis (✓)	Good reasoning	Sound—Based on fact	
Abstract reasoning	Can't plan attack	Solves simple problems	Inaccurate at times	Outlines then attacks (✓)	Quick, accurate solution	
Learning	Slow and faulty	Rapid but forgets	Slow but learns (✓)	Absorbs easily	Rapid and remembers	
Observation	Sees and hears little	Misses details	Notices most details (✓)	Observes things well	Keen attention	
Social intelligence	Occupied with self only	Some attention to others	Occasionally offends (✓)	Adjusts to surroundings	Adjusts easily	
Cooperation	Antagonizes others	Stubborn	Generally agreeable	Fits in well (✓)	Stimulates others	
Thoughtfulness	Belittles others	Indifferent to others	Notices people	Interested in people (✓)	Praises properly	
Emotional control	Moods impair work	Occasional poor control	Seldom affects work	Well controlled	Very stable (✓)	
Direction	Antagonizes others	Always follows	Average for jobs (✓)	Satisfactory leader	Willingly followed	
Appearance	Slovenly	Careless (✓)	Passable	Acceptable for jobs	Well clothed for job	

Job interest: 3 | 2

Intelligence: 2 | 2+

S.I.: 3 | 2

Leadership: 3 | 3-

Group	Constructive imagination	None	Can copy only	Plans details	Works out new ideas	Conceives thorough plans
Planning 1/3	Resourcefulness	Can't find answer	Flounders—some results ✓	Overcomes some troubles ✓	Knows where to ask	Always finds solution
	Economics	Disregard costs	Watches pennies not dollars	Slightly extravagant	Good cost sense	Balances job and cost ✓
	Making suggestions	Too many poor ones	None	Few and fair	Usually sound ✓	Always intelligent
	Accepting suggestions	Usually resented	Debated even if good	Accepted if usable	Welcomed ✓	Solicited
	Influential initiative	Hinders others	Drives unmercifully	Arouses part of group ✓	Speeds others' output	Energizes group efficiently
Drive 2/3	Making decisions	Can't decide	Hasty & faulty	Slow—adequate	Deliberate but sound ✓	Accurate and fast
	Organizing ability	Can't organize	Too late for job	Some hitches	Meets schedule usually ✓	Efficient scheduling
Follow-through 3/3	Thoroughness	Can't finish	Leaves loose ends	Most details done	Generally accurate ✓	All details complete
	Dependability	Unreliable	Often forgets	Requires checking ✓	Usually reliable	Always reliable
	Responsibility	Passes buck or oversteps	Dislikes but accepts ✓	Accepts	Performs willingly	Takes and delegates well
	Use of sound suggestions	Rejects	Abandons	Carries through some	Utilizes most	Profits from all ✓

(Work review adjustment has not been made—Adjustment is described later in this chapter.)

Abstract Reasoning differs from judgment, in that it relates to abilities such as mathematical reasoning. Reasoning based on material fact that has not been encountered before is a valuable asset.

Learning measures the speed with which the person absorbs new information. This is an especially desirable characteristic for supervisors who are in line for advancement. It is also allied to training grades. Those who learn rapidly usually do make good grades.

Observation, an especially desirable characteristic, is that quality which permits the person to see and remember things well. It is very important in inspection in factories and of great value in supervision, as well.

Social Intelligence.—Social Intelligence relates to doing the right thing with a group at the right time. This quality is of special importance to leaders, as they are under constant observation by other supervisors and workers. Troublemakers are usually low in this quality. Social intelligence was tested separately from leadership in the Personality Index. It is not always related directly to the Intelligence of the previous characteristic.

Leadership.—The five qualities reviewed under Leadership all relate to the person's direct effect upon others. There are also other characteristics of leadership which are found throughout the personality review.

Cooperation relates to the ability to work with others so that the worker carries his proper burden. It is a measure of the ability to submerge some personal convenience in the interest of the convenience of others.

Thoughtfulness is consideration of other people, particularly with respect to their feelings. A thoughtless person is usually thinking only of himself.

Emotional Control might be regarded as the control of temper. It includes more than that. It includes control of great discouragement or great elation. Emotion may be shown, but it should not affect the person to the detriment of his normal thinking. The trouble with emotional

instability in business is that it distorts the normal thinking process. Once this happens, the person is at a tremendous disadvantage. This is especially serious in supervision. By the time that the emotion has subsided, the damage has been done.

Direction may be regarded as, simply, the quality of pure leadership. It is the ability to make others follow oneself, and is the opposite of the tendency to follow.

Appearance may not be an essential element in leadership, but it is difficult for anyone to lead if his appearance is against him. This applies to dressing too poorly or too well for the job. The dandy has no place in the shop, while coveralls have no place in the office. That appearance is best which is most suitable to the surroundings. This shows that the person cares to some extent that his appearance should measure up to the best standards, but that he has in mind the standards that belong to the particular job.

Planning.—Planning is divided into five main characteristics.

Constructive Imagination is that quality which permits the worker to see new ways of doing things. It is the type of imagination that sees methods for tomorrow based on what is being done today.

Resourcefulness is the quality by which jobs are done well when tools are missing or some substitute method or material must be found. It is the factor that keeps production rolling.

Economics is cost sense. It is the quality that avoids waste—the characteristic that prevents the worker from being forever dissatisfied with present machines when he realizes that the new machine is not an economic advantage. It is the factor that dictates the dividing line between overtime and hiring new men when work increases.

Making Suggestions and *Accepting Suggestions* are quite different things, and both are considered under Planning. Many workers have either one or the other quality,

but usually not both together. Both terms are self-explanatory.

Drive.—Drive is that characteristic which keeps the worker and the supervisor going steadily. It is the quality that infects other workers when things are going slowly, causing them to put forth extra effort. More than anything else, it is that which impels a person to finish on time; it is *not* the quality of driving others by demands and threats. Drive is divided into three parts: Influential Initiative, Making Decisions, and Organizing Ability.

Influential Initiative is the power in the man and in his efforts that makes others willingly follow his lead to greater output.

Making Decisions is a self-explanatory term. This is the quality that causes others to step up their pace. As long as a problem is undecided, work will stop. If the decision is slow, the work will be slow. When decisions are promptly made, the work is more likely to move rapidly.

Organizing Ability is especially important, since workers will be discouraged when work stops and starts for little reason other than that material and workers are in the wrong place. If the material is there, the worker will drive himself to keep up with the supply of material. A belt conveyor is a great work organizer. It keeps the new material flowing to and away from the worker. Although some may complain, the good worker finishes his job and enjoys a short rest. The conveyor, which drives him at a standard speed, then catches up and he starts work again.

Follow-through.—The last item of personality review is follow-through. This is the ability to do a job without fail. It is that quality which, when properly exhibited, calls for no reminders, once an assignment is made. This characteristic is made up of four parts: Thoroughness, Dependability, Responsibility, and Use of Sound Suggestions.

Thoroughness is the completeness of finishing. It is the final finishing of every single loose end. It assures the supervisor that constant checking is unnecessary.

Dependability is a measure of consistency. A dependable person will finish the job. On the other hand, a thorough person may be absolutely undependable, as he may stop and waste time before completing the job.

Responsibility is the willing acceptance of authority or responsibility. It also has to do with proper delegation of parts of that responsibility.

Use of Sound Suggestions is the third step, which follows Making Suggestions and Accepting Suggestions. It consists of finally and actually putting them to work. Many can make or accept a good suggestion while few can put it to work; yet, ability to do this is an important element in follow-through.

WORK-REVIEW AVERAGE DETERMINATION

Work reviews should be made by persons fully trained in this process. In that event, check marks will usually fall in one particular block with great uniformity. Sometimes, however, a particular quality will be checked in different boxes by three different reviewers. The ordinary reviewer tends to be lenient. If he does not know specifically about a characteristic, he will tend to grade high.

For this reason, the following rules have been found to be most effective. Suppose that grades are checked as follows by three reviewers, *A*, *B*, and *C*, under the one quality of Drive.

Grade	0	1	2	3	4	
Drive						
Influential Initiative.........					A B C	
Making Decisions...........		C	A	B		
Organizing Ability.........			A B	C		

Perfect agreement appears on Influential Initiative, as reviewers *A*, *B*, and *C* concur. Under Making Decisions,

the three reviewers do not agree. The average is clearly 2. Organizing Ability shows some difference, but not a serious one. If the grades are averaged, the result will be 2.3. This is done by adding A and B's two 2's to C's grade 3, giving 7, and dividing by 3 (the number of reviewers). As Drive is one whole quality, it is best to average all nine marks together for an over-all average of 2.8 (*i.e.*, 25 divided by 9).

WORK-REVIEW AVERAGE ADJUSTMENT

The work-review average has now been determined on the basis of the review marks. It is then found that there is a tendency for this average to be uniformly high or low. The amount of this trend can be judged by comparing work reviews with the normal distribution curve. When this has been done, it will be found that Performance needs a one-half point adjustment downward, except for those where complete uniformity of agreement exists at the 4 level, in which case no adjustment is needed. Thus, if Quality has an average of 3, the actual score should be

Final grade	Job interest	General intelligence	Social intelligence	Leader-ship	Plan-ning	Drive	Follow-through
	—4.0—	—4.0—	—4.0—	—4.0—	—4.0—	—4.0—	—4.0—
4 Outstanding	3.4	3.5	3.5	3.6	3.5	3.4	3.6
	—2.9—	—3.0—	—3.2—	—3.3—	—3.3—	—3.1—	—3.4—
3 Above average	2.6	2.5	2.9	3.1	3.2	2.9	3.3
	—2.3—	—2.0—	—2.5—	—2.9—	—3.1—	—2.6—	—3.2—
2 Average	2.0	1.5	2.0	2.7	2.9	2.4	3.0
	—1.5—	—1.0—	—1.5—	—2.5—	—2.7—	—2.1—	—2.7—
1 Below average	1.1	0.5	1.0	2.3	2.5	1.9	2.4
	—0.8—	—0—	—0.5—	—2.0—	—2.1—	—1.6—	—2.0—
0 Unsatisfactory	0	...	0	1.6	1.5	1.2	1.5

recorded as either 2.5 or 3 —, by whichever scoring scheme has been chosen.

In Personality, it is somewhat more complicated. The adjustments are shown in the table shown on page 152.

Thus, if the work-review average for Leadership were 2.7, this means a grade of 2 after this adjustment. If Drive were 2.7, the table gives an adjusted grade of 3 —.

Example of Averaging and Adjustment.—Three elements selected from a review sheet showed the following:

Grade	0	1	2	3	4	
Quality						
Accuracy			*A B*	*C*		
Neatness			*A*	*B C*		
Volume					*A B C*	
Job Interest						
Enthusiasm			*A*	*B*	*C*	
Useful Initiative				*A B C*		
Concentration	*A B*	*C*				

This gives the following averages:

Quality............................... 2.5
Volume............................... 4
Job Interest........................... 2.1

These would be adjusted from the preceding Performance rule and Personality adjustment table to be:

Quality............................... 2
Volume............................... 4
Job Interest........................... 2

It is hardly necessary to say that if one reviewer frequently grades far below all others on a review sheet, this fact should be considered before the grades are averaged and adjusted. A decision should be made as to whether this person is unduly prejudiced. If it is decided that this is so, these grades can be eliminated completely before averaging or adjustment to the final grade takes place.

PERFORMANCE AND PERSONALITY REVIEW

Name *John A. Brown* Location *Cleveland* Department *Acctg.* Section *Cost*

Occupation *Acct —* Reviewer *A. C. Noyes* Date *9-7-44*

Instructions

The performance and personality review sheet is to be used for three purposes:
1. For periodic review of an individual in a group.
2. For self-rating of any person, including supervisors.
3. To provide a definite means for a supervisor to go over strong and weak points, *in equal detail*, with an individual.

The words suggested on the form enable the supervisor adequately to praise or constructively to criticize the work and personality of the individual being interviewed.

If the supervisor is unable to check one of the one or more items in each group, he should observe this characteristic before the next review. The supervisor should check only those items on which he can make a positive judgment.

The main headings of the groups are listed in the left-hand column. Beside this are listed the characteristics appearing in this group. The five descriptive phrases following are for grading the various characteristics by making a simple check mark under the proper one. The first is 0, or unsatisfactory; the second is 1, or below average; the next 2, or average; the next 3, or above average; and the last (right column) is 4, or outstanding. For example, if the main heading Quality is being judged, and the descriptive term Normal mistakes is checked, the characteristic Accuracy would receive a grade of 2. Neatness would receive a grade of 4 if Neat and good housekeeping were checked.

A divided box is provided under each main heading. Enter the averaged and adjusted grade made by the individual for that group in the top half of the box. The bottom half gives the grade the supervisors consider necessary for the job. If an individual rates higher than the required grade, he should be complimented. If he rates below the required grade, this should be called to his attention.

Upon conducting a review, the person being reviewed should be allowed to see the data on the sheet and the grades. However, he should not see the back of the sheet with a reviewer's name.

Three supervisors should make out sheets for each individual, if possible. These individual reviews should be consolidated on the one sheet which is to be shown to the individual.. The check marks can be shown as placed by the reviewers, calling them *A, B.* and *C* or 1, 2, and 3.

Individual sheets will have the reviewer's name on the back. Composite sheets will be marked "Composite" in the space for the reviewer's name. Self-rated sheets will be marked "self."

One copy of the review, self review, and composite is filed. One copy of each is sent immediately to the Training Department, in a sealed envelope marked "Review Sheets." Other copies will be distributed according to departmental requirements.

Space is provided below for remarks to be made after showing the review sheet to the person reviewed.

Comments on interview *Agrees generally — See his self-review sheet.*

_____

_____

_____

It is absolutely necessary to average and adjust work reviews before comparing results with the Personality Index. Adjustment gives true grades to measure the degree of excellence of any one factor always.

If the review sheet differs somewhat from the one given in this book, or if the supervisors in the plant are more or less strict than those used to obtain the adjustment table shown, a new adjustment table can be made. It should be modified periodically as experience dictates.

Finally, it should be realized that average scores may always be compared directly with average scores, without adjustment, when comparing reviews or self-reviews.

SUMMARY OF WORK REVIEW

The review sheet has been shown. Each of the qualities has been described in sufficient detail to make it clear. The method of arriving at an adjusted average has been shown.

The back of the review sheet itself should contain instructions for its use. The reverse side of such a sheet is shown on page 154.

The next chapter considers the methods of using these sheets. Case studies will be shown as well.

QUESTIONS

1. What was the most elementary type of rating or review?
2. What might 2+ mean to the nearest tenth unit?
3. What would a grade of 2.9 be as a single-unit grade?
4. How many supervisors should review an employee?
5. What are the three factors of job interest?
6. Saying the right thing at the right time without offense indicates a high degree of what characteristic?
7. Resourcefulness is included under what heading?
8. Completeness is measured under what subheading?
9. Under what heading is concentration grouped?
10. Observation includes what two main factors?

PROBLEMS[1]

1. Copy the headings of performance on quintuplicate sheets. Place a grade number after each (on one of the sheets) which shows your estimate of your own performance.

[1] Answers to problems 1 and 4, if collected by an instructor, will be treated in confidence.

2. On a similar sheet, grade a friend or an acquaintance. Do not show the name of this person.

3. Have two acquaintances grade another person, such as a well-known man, on performance. Do this yourself separately. Copy both results on your sheet showing a different mark for each of the three graders. Average and adjust these.

4. Make up four sheets similar to the ones above but for personality instead of performance. Grade yourself on one of these sheets.

5. Have two friends each grade a sheet on the person used in question 3 above. Grade one sheet yourself. Copy all three results on your one sheet, showing the numbers 1, 2, and 3, instead of check marks, to designate the three separate scorers. Average and adjust.

CHAPTER XII
USE OF WORK-REVIEW SHEETS

Both the Personality Tests and the work-review sheets are purposely so made that results may be recorded on one card. This card graphically portrays the performance and personality of the worker or the supervisor. Other information may be shown as well, as will be explained. Averaged and adjusted scores are always used.

FIRST WORK REVIEW

At the end of each period of about 3 to 6 months, a work-review sheet is made out for each person by his superiors. An example of a test score with an averaged and adjusted work-review score is plotted on the profile card shown on page 158.

Case 1.—In this case, the test grades also have been plotted on the same sheet. It can be seen that the test agrees quite well with the actual performance on the job. This is not always the case, as will be seen.

SECOND WORK REVIEW

Six months to a year later, this individual is reviewed again. A new profile comparison can be made, which might show up in the following manner (page 159). The original test grades will be omitted, to prevent confusion. In actual practice, several colors can be used, which will make it easy to distinguish among several reviews as well as among test grades.

Something has happened. Attendance and Drive have dropped far down. Job Interest has also lessened. The only better grade is in Knowledge of Job. Is this really better, or was it just so represented by reviewers, to com-

NAME **Case #1**   JOB TITLE **Accountant**   DEPT. **Acct'g.**   LOCATION **Cleve**

				PERFORMANCE				PERSONALITY						Test	Review
	QUALITY	VOLUME	KNOWL OF JOB	ATTEN-DANCE	SAFETY	JOB INTEREST	GENERAL INTEL.	SOCIAL INTEL.	LEADER-SHIP	PLANNING	DRIVE	FOLLOW THROUGH		
OUTSTAND. +4													4	
ABOVE AV +3													3	
AVERAGE +2													2	
BELOW AV +1													1	
UNSATIS. +0													0	
Test	1	1	2-	1	1	2-	3-	3	3	3-	3	3+	X	
Review	3-	2	2+	3	2	2	2+	3	3-	3-	3-	3-		●

Legend:
Test 8-10-43 ●——●
Review 11-12-43 x---x

Test and Review Comparison
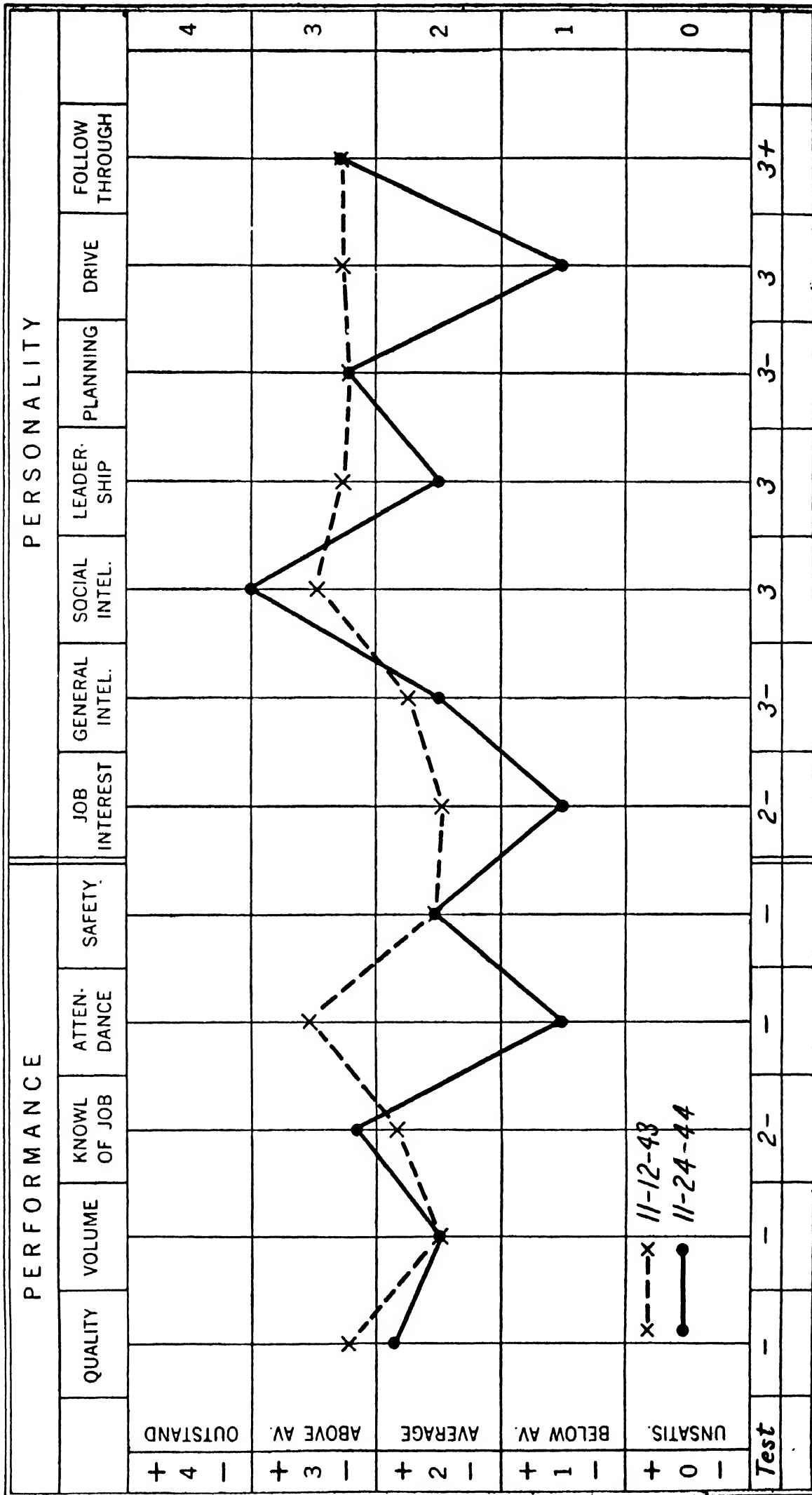
Two Review Comparisons

pensate for other poor opinions? The question is, **Has the man changed?** Has he a new supervisor?

Certainly it is high time to look into such a case before that man is lost to the company. Remember, his previous tests and actual work record were good. Trouble at home, drinking to excess, or just being in the wrong job are possible reasons for the great change. The new supervisor who kills all initiative and interest might have wrought the change. It may be due to a personal clash between supervisor and worker. Possibly the man was simply reprimanded in the presence of others. Whatever the cause, investigation is in order.

THIRD WORK REVIEW

After investigation, the worker was transferred to another job; for it had been decided that the difficulty was in supervision. After some time in the new job (3 months after starting any new job, and then every 6 months to a year seems a logical interval) the work review shows these results (page 161).

The worker has returned to his original profile. The decision to transfer him was the proper choice. The supervisor whom the worker left should have his own work review carefully studied. The supervisor's immediate superiors may find him deficient. If this was an isolated instance, no need for concern exists; but if the supervisor had other such cases, he should either be moved to a more suitable job or discharged. Demotion is another possible procedure, but this is generally a very unsatisfactory solution. A good man who is demoted will leave of his own accord.

TRAINING OF REVIEWERS

As every supervisor is a reviewer, it is essential that he shall understand the methods and proper interpretations of reviews. To lay down a fixed set of rules is almost impossible. There are twelve variables and hundreds of combinations.
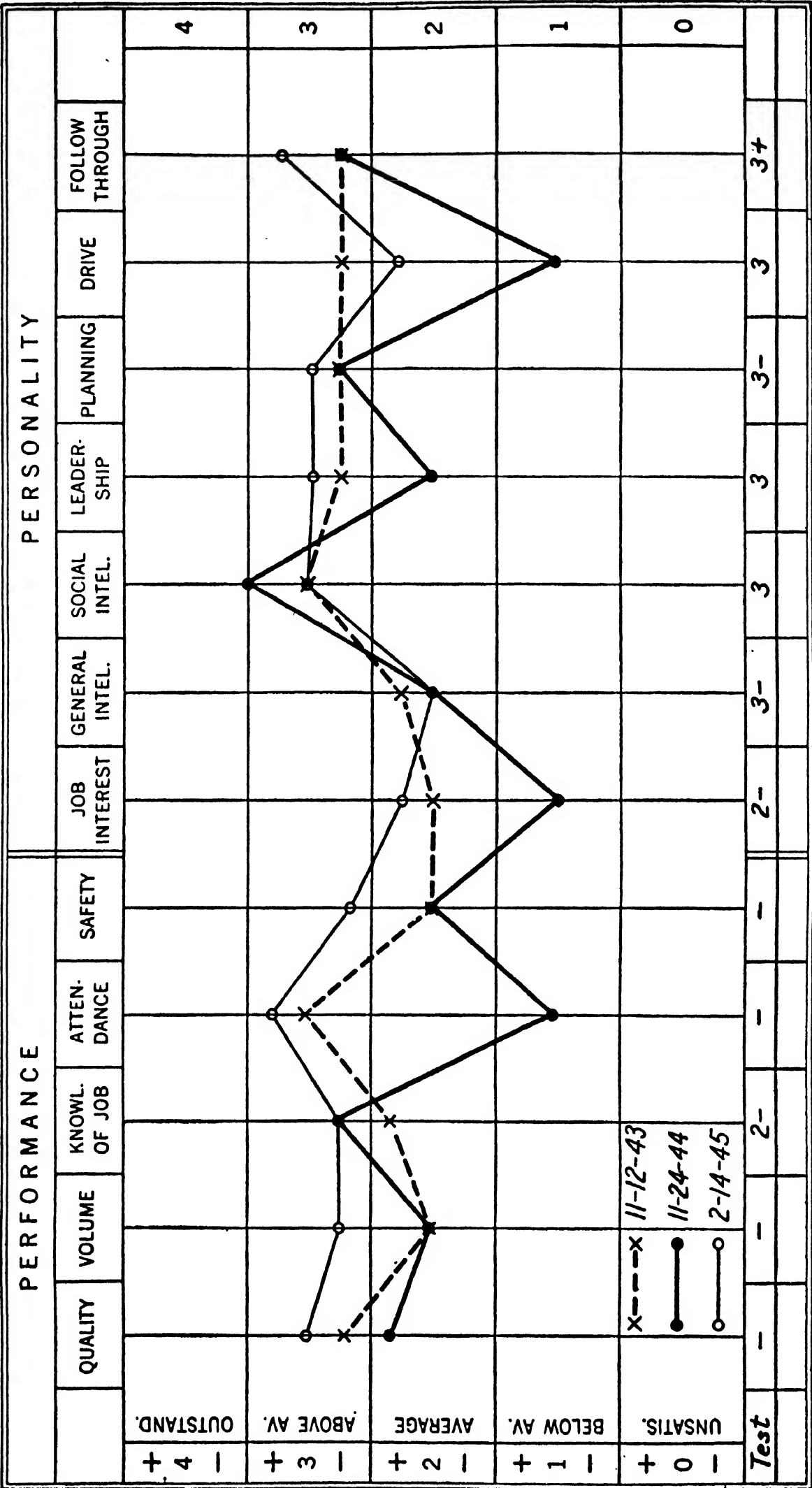
THREE REVIEW COMPARISONS

The best method to use in training is to bring to the supervisor the realization that the review is an important tool. This can be demonstrated forcefully by having each person in such a course actually review three others in the group—or fewer, if his acquaintance within the group is limited. He will realize that a review is very important, when it comes directly home to him. The results of the review should be compiled by the instructor and given back to each member, with three colored lines showing on the profile card. Each of these lines represents how one unidentified member of the group graded him. Any discrepancies between individual opinions are forcefully demonstrated.

The course, which should require but a few hours, should then be devoted to actual case studies taken from records. Profiles should not be identified with any individual's name. Three points are to be stressed. (1) Uniformity occurs when judgment has been deliberately freed from emotional reactions. (2) Work review is a help to the individual. (3) The review is a help to the company in fairly judging every individual worker and supervisor.

Training in review should be a part of every course given to supervisors on the methods of management and supervision.

Case 2.—A case study of an individual who has been reviewed 3 months after his entrance into a company is shown on page 163. From the profile, judge what it means.

Actually, there is little wrong here. The worker was accepted on the basis of test and interview. The job being done is routine and simple. There is a tendency, nevertheless, for the supervisor to want persons far above average for a job of this kind. The result of such a selection would be disastrous. The above-average worker would be dissatisfied. Turnover would be increased if this practice were continued.

Case 3.—This third case is that of a worker who has a fairly good job of a supervisory nature. The worker has

NAME *Case #2*   JOB TITLE *Janitor*   DEPT. *Svc.*   LOCATION *Cleve*

	PERFORMANCE						PERSONALITY					
	QUALITY	VOLUME	KNOWL. OF JOB	ATTEN-DANCE	SAFETY	JOB INTEREST	GENERAL INTEL.	SOCIAL INTEL.	LEADER-SHIP	PLANNING	DRIVE	FOLLOW THROUGH
OUTSTAND. (4)												
ABOVE AV. (3)												
AVERAGE (2)												
BELOW AV. (1)												
UNSATIS. (0)												
Test	1—	1	2—	1	1	2	1—	1	2	1	1	1
Review	2	2—	2	2	1	2—	1	2	1+	2	1	2—

Scale: OUTSTAND. + 4 — ; ABOVE AV. + 3 — ; AVERAGE + 2 — ; BELOW AV. + 1 — ; UNSATIS. + 0 —
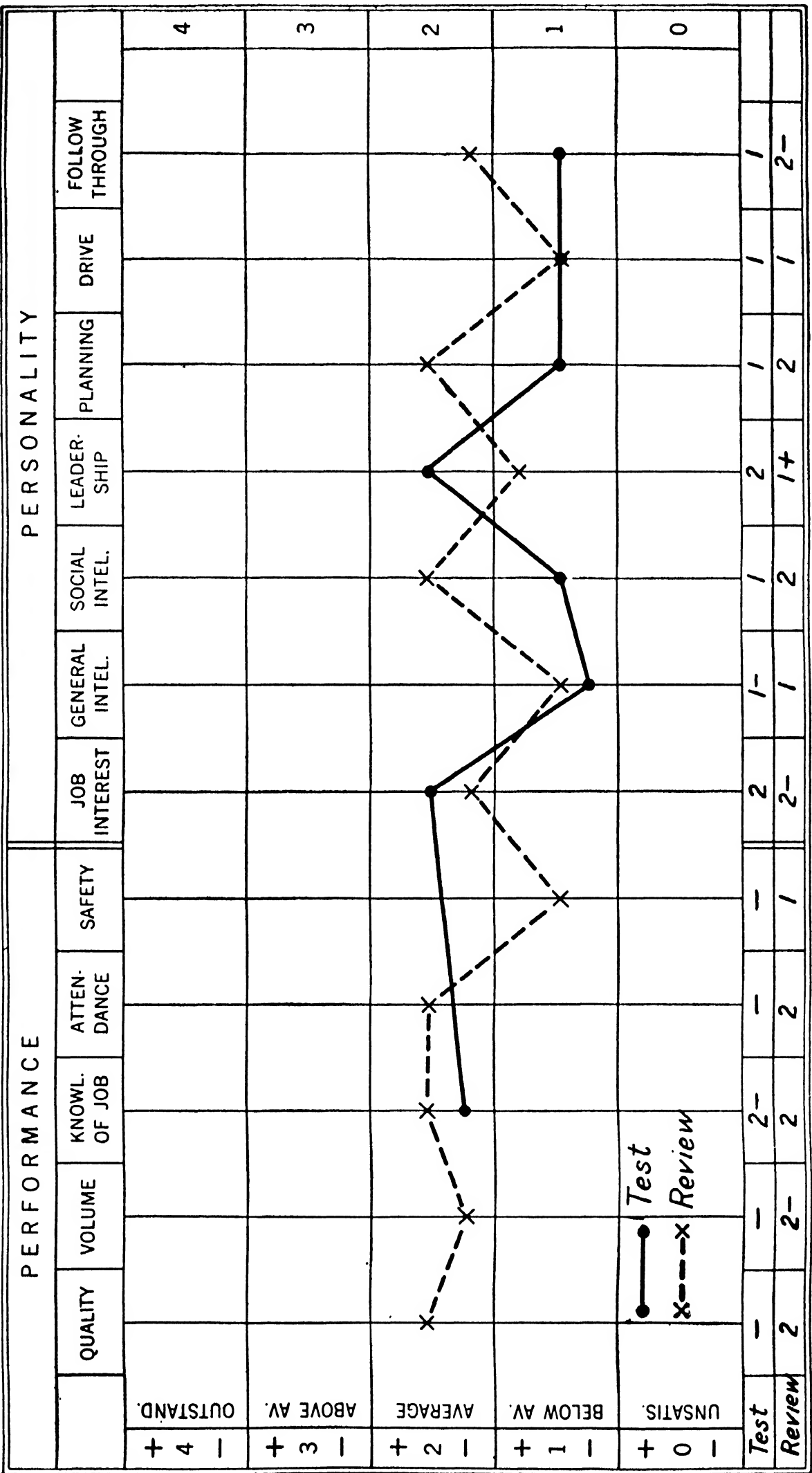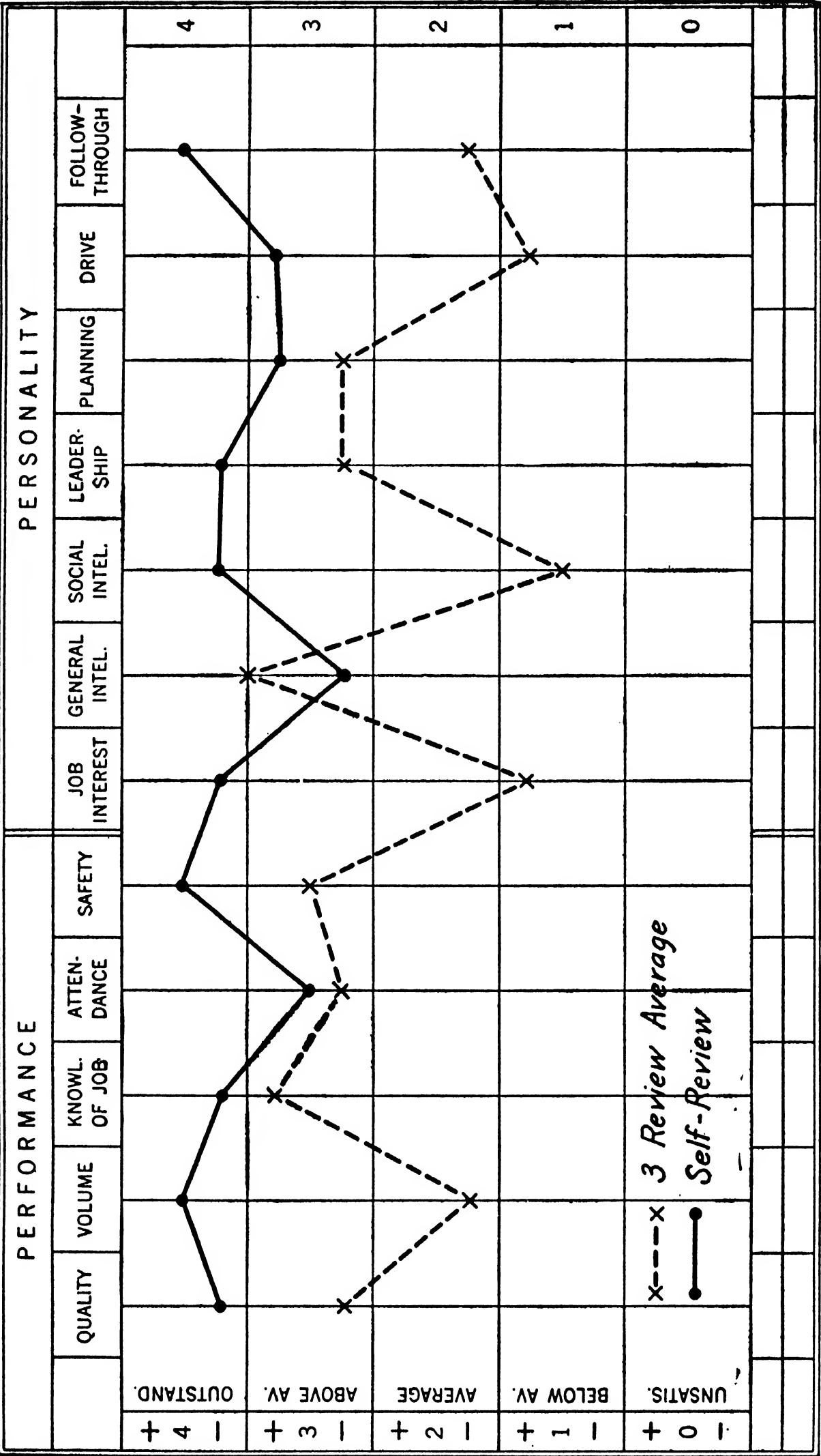
●——● Test
×--×--× Review

seen a profile of his work review, with which he disagrees heartily. It so happens that the test results agree pretty well with the review. All these reviewers are also fairly uniform in their judgment. Therefore, a blank review sheet for self-review is given to the worker. The results are shown on the profile on page 164. What is wrong?

The first thing that is wrong is that the man believes himself to be uniformly better than his reviewers have shown him to be. There is one exception common to most such cases. That is where a man does not rate himself as high in General Intelligence as do his reviewers. This returns once more to the worker with high General Intelligence. Knowing this, he translates it to apply to all other characteristics of his personality.

Why a person with high general intelligence and a poor personality should feel this way is not definitely known. Perhaps it is a realization of his lack of present success that spoils his personality. Low Volume, low Job Interest (really high Self-interest), low Social Intelligence, and low Drive spell trouble. The exact reason for poor Follow-through may or may not be tied to the other failings. Perhaps this is just another manifestation of what happens when this man runs down his company and friends—which he will do, as a rule.

In review, where a worker rates himself uniformly higher than his superiors rate him, there is trouble. He usually underrates his intelligence in self-review, as well.

Case 4.—An assistant supervisor in a company was reviewed. He believed that such reviews were only for the use of workers. The record is shown on page 166.

Generally, his performance was very good. In the opinion of his reviewers, however, he did grade himself too high in Attendance. He was incensed at the difference.

"I work after hours every night. I take a lot of work home. I'm on the dot at every meeting. What difference does it make if I am just a few minutes late to work once in a while?"

NAME _Case #4_ JOB TITLE _Ass't. Supv._ DEPT. _Planning_ LOCATION _Cleve_

PERFORMANCE | PERSONALITY

QUALITY | VOLUME | KNOWL. OF JOB | ATTEN-DANCE | SAFETY | JOB INTEREST | GENERAL INTEL. | SOCIAL INTEL. | LEADER-SHIP | PLANNING | DRIVE | FOLLOW THROUGH

OUTSTAND. +4−
ABOVE AV. +3−
AVERAGE +2−
BELOW AV. +1−
UNSATIS. +0−

x---x Review
•——• Self-Review
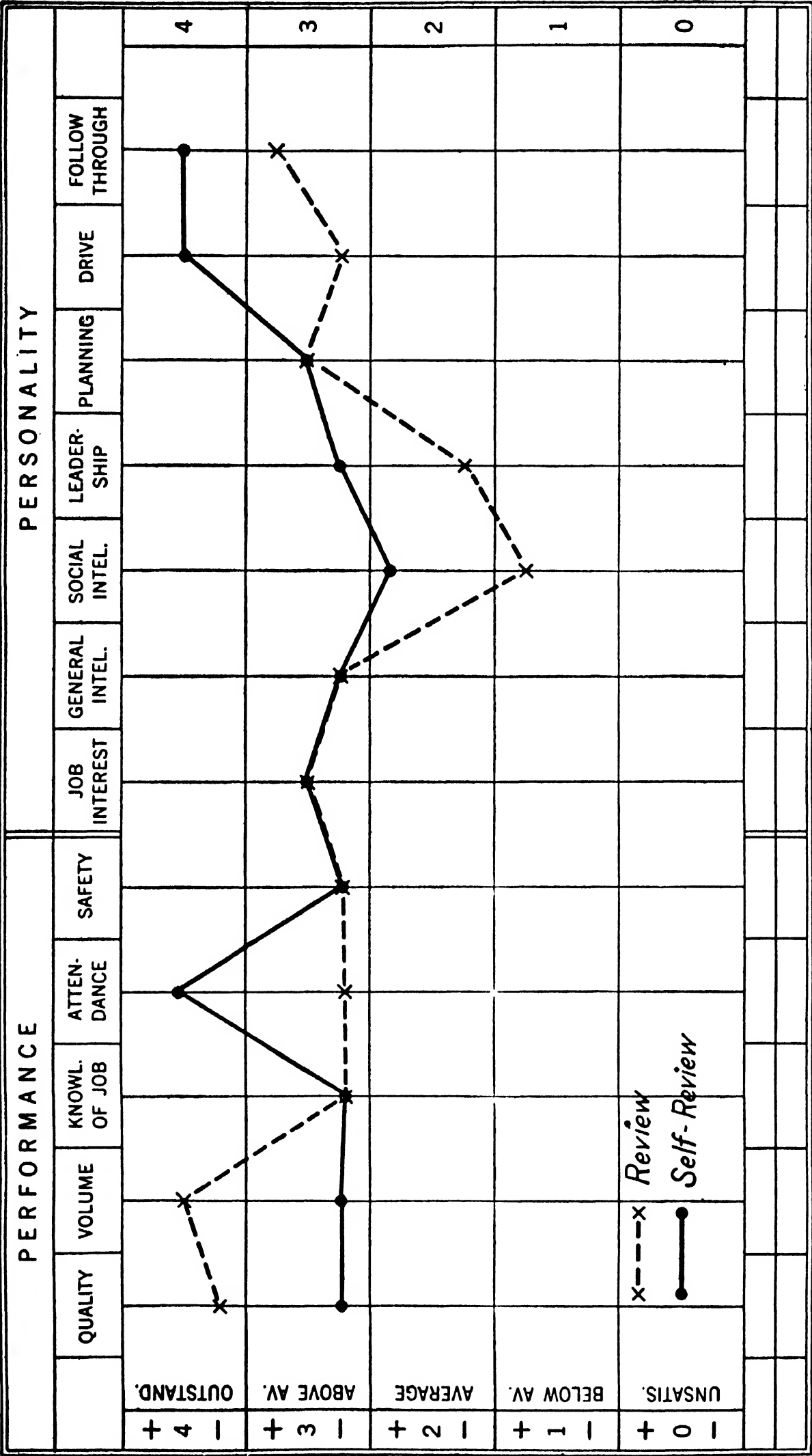
As a matter of fact, he was not "on the dot" every day; he frequently was later than "just a few minutes." So two of his reviewers had marked his Punctuality as irregular. When he himself was early, he was always incensed if one of his men was even a minute late, saying, "They leave on the dot every night!"

This brings up an important point. To find why each item is not where it should be, reference *must* be made to the review sheet itself. So the review sheet shown on pages 168–170 must now be examined.

The three reviewers are indicated by a check mark, a cross, and a circle, respectively. The marks have been averaged and adjusted by the method shown in the last chapter. Grades are shown in the lower box for each characteristic and below the desired grade.

This man's self-review is shown by the letter *S*, and it is *not* averaged with the other reviewer marks, of course. His self-review was adjusted, however, when it was plotted on the profile sheet.

Performance is low in two respects; personality, in three. This is indicated by two reviewers or often by one, provided that his mark is reasonably close to the ones above it.

Main heading	Subheading	Reason
Knowledge of job	Equipment	Partial knowledge
Attendance	Punctuality	Irregular arrival
Social Intelligence	None	Occasionally offends
		Some attention to others
Leadership	Direction	Antagonizes others
Planning	Accepting Suggestions	Debated, even if good
		Acceptable if usable

This all immediately adds up to two main reasons:

1. Insufficient attention to others
2. An antagonistic attitude

It is amazing how often the very low checks all add up to tell a simple story with *one* or *two* principal *failings*.

Performance

	0	1	2	3	4	Remarks
Accuracy	Very careless	Frequent errors	Normal mistakes	Usually accurate √S	Very exact O X	
Neatness	Slovenly	Untidy	Passable	Neat—poor house-keeping S	Neat—good house-keeping O √ X	
Volume produced	Very low output	Below standard	Required amount	High in spurts S	High quantity X √ O	
Basic knowledge	Needs training badly	Weak on fundamentals	Enough for jobs	Well informed O √ X S	Inventive	
Equipment	Needs help often	Partial knowledge √ X	Sufficient to operate	Can operate well O S	Knows and can repair	New in job
Versatility	Can learn few jobs	Slow to adjust	Skillful present job	Adept several jobs S	Skilled in many jobs O √ X S	
Co. and dept. reg. and policies	Faulty information	Knows few—Can't find	Familiar with sources	Usually posted X S	Accurately informed O √	
Use of time	Dawdles	Wastes time daily	Usually on job	Always occupied O	Extremely busy X √	
Punctuality	Often late	Irregular arrival O √	Usually prompt	On time on job X	On time for everything S	
Illness	Frequent absence	Habitual poor health	Some absence, colds, etc.	Seldom out O	Never sick X √ S	
Absence (personal)	Frequent absence	Habitual excuses	Occasional	Seldom out √ X O	Never absent S	
Safety	Hazard to others	Few accidents	Safe worker	Safe and safety minded S √ X O	Safe—protects others	

Left-margin group ratings: Quality 3/4, 4/— ; Vol. 3/4 ; Knowledge of job 3/—, 3/3 ; Attendance 3/—, 3/3 ; Safe 3/—, 3/3

Personality

	0	1	2	3	4
Enthusiasm	Indifferent	Slow to excite	Properly interested O √ X S	Eager to attack job	Absorbed interest
Useful initiative	Can't start any job	Slow to get under way	Attacks new jobs	Self-starter O √ X S	Initiates and starts jobs
Concentration	Easily interrupted	Often sidetracked	Satisfactory concentration	Hard to mislead X √ O S	Absorbed attention

Left-margin group rating: Job interest 3/3

Judgment	Easily misled	Jumps to conclusions	Average analysis	Good reasoning	Sound—based on fact	
Intelligence 3 / 3–						
Abstract reasoning	Can't plan attack	Solves simple problems	Inaccurate at times O ✓ ×	Outlines then attacks S	Quick, accurate solution	
Learning	Slow and faulty	Rapid but forgets	Slow but learns O ✓ × S	Absorbs easily ✓	Rapid and remembers	
Observation	Sees and hears little	Misses details	Notices most details S	Observes things well O ✓ ×	Keen attention	
S.I. 2 / 1+						
Social intelligence	Occupied with self only	Some attention to others O ✓	Occasionally offends × S	Adjusts to surroundings	Adjusts easily	Must be improved
Cooperation	Antagonizes others	Stubborn	Generally agreeable O	Fits in well ✓ × S	Stimulates others	
Leadership 3 / 2–						
Thoughtfulness	Belittles others	Indifferent to others	Notices people O ✓ × S	Interested in people	Praises properly	
Emotional control	Moods impair work ✓ O	Occasional poor control	Seldom affects work	Well controlled S O	Very stable × ✓	
Direction	Antagonizes others ✓ O	Always follows	Average for jobs ×	Satisfactory leader S	Willingly followed	Especially bad lately
Appearance	Slovenly	Careless	Passable	Acceptable for job S	Well clothed for job O ✓ ×	
Constructive imagination	None	Can copy only	Plans details	Works out new ideas S ×	Conceives thorough plans ✓ O	
Planning 2 / 3						
Resourcefulness	Can't find answer	Flounders—some results	Overcomes some troubles	Knows where to ask S ×	Always finds solution O ✓ × S	
Economics	Disregards costs	Watches pennies not dollars	Slightly extravagant	Good cost sense O ✓	Balances job and cost × S	
Making suggestions	Too many poor ones	None	Few and fair	Usually sound O ✓ ×	Always intelligent S	
Accepting suggestions	Usually resented	Debated even if good ✓	Accepted if usable ×	Welcomed S O	Solicited	

PERSONALITY.—(Continued)

	0	1	2	3	4	Remarks
Influential initiative	Hinders others	Drives unmercifully	Arouses part of group ✓O	Speeds others' output ×	Energizes group efficiently S	
Making decisions	Can't decide	Hasty and faulty	Slow—adequate	Deliberate but sound O✓×S	Accurate and fast	
Organizing ability	Can't organize	Too late for job	Some hitches	Meets schedule usually O✓×	Efficient scheduling S	
Thoroughness	Inaccurate	Leaves loose ends	Most details done	Generally accurate	All details complete O✓×S	Very outstanding
Dependability	Unreliable	Often forgets	Requires checking	Usually reliable O✓×S	Always reliable	
Responsibility	Passes buck or oversteps	Dislikes but accepts	Accepts	Performs willingly O✓×S	Takes and delegates well	
Use of sound suggestions	Rejects	Abandons	Carries through some ✓	Utilizes most	Profits from all O×S	

Drive $\frac{2}{3}-$

Follow-through $\frac{3}{3}+$

The clever worker or supervisor can and will do something to overcome this. If only one or two important deficiencies are responsible, he can work on them. They must be combined to tell so simple a story that the individual can remember it.

DISCUSSING THE REVIEW SHEET

The discussion must be planned somewhat as follows:

1. Seat the person being reviewed.
2. Tell him what you are going to discuss—*himself.*
3. Put him at ease.
4. Show him the review sheet and give him time to look it over quietly.
5. Praise some high points.
6. Discuss some low points.
7. Don't ask him to change himself.
8. Discuss the remaining high points.
9. Thank him for coming in, and say that you are interested.

Take the last case, No. 4. The assistant supervisor is discussing it with his supervisor:

Supervisor: Come in, Norm, and have a seat. How are you today?

Assistant Supervisor: Good morning, Tom. I'm fine. (*Still stiff*)

S.: I asked you in to go over your periodic review sheet with you. I was very much interested in what you told me about its use in your department. Are you through with your foremen's reviews yet?

A. S.: No, we expect to be through at the end of the week. We found a couple of interesting things this time.

S.: Is that so—what were they?

A. S.: Well, Joel Brester finally got the idea. He has improved in the last 6 months. You wouldn't know him. I'm afraid that a couple of the others will never change, though.

S.: Well, that's to be expected. Some of us get pretty

well set in our ways. Even if we can help a couple of our men improve, it's worth while, isn't it?

A. S.: Yes, it certainly is.

S.: Want to go over your latest review?

A. S.: Sure, let me see it. (*Supervisor hands it to him and waits quietly for him to speak.*) Isn't so good, is it?

S.: I don't agree. Look at the threes and fours in the Performance columns. The quality and volume of your work always impress me a lot.

A. S.: Yes, but according to this, I don't know my equipment very well, do I?

S.: Did you ever ask any of the fellows to show you how to run their machines? You know we have a lot of employees who are very much pleased when anyone shows interest in what they do. Ask Harry Foster to let you operate his new calculator some day. It's very handy for income tax once in a while.

A. S.: I get my tax expert to figure mine out.

S.: Sure, I know, but try operating the machine. You can learn to operate it in half an hour.

A. S.: Why is my arrival irregular? I work after hours every night. I'm on the dot at every meeting. What difference does it make if I am just a few minutes late to work once in a while?

S.: I know you work late a lot. I certainly appreciate the tremendous amount of interest in your work. Do your men arrive on time?

A. S.: Well, that's *one* thing we do. They are always on the dot, or I raise Cain.

S.: I've found it's a good idea to set the example. (*Pause.*) There are four items under Personality which aren't too good. We've discussed this before. They add up to not paying enough attention to others and being antagonistic. We can go over each if you like. Remember this—I don't expect you to change your ways if you don't want to. You have dozens of fine characteristics.

A. S.: Well, I don't agree with these ratings at all. It

seems to me there are a couple of birds who are doing a little sharpshooting while *they* can improve a lot.

S.: That may be true, as you say. These reviews are for the general good of all and not to pick the other fellow apart. I would like to say, however, that your ability to plan amazes me. I wish I could pass on your quality to them.

A. S.: Well, I do my best. After all, I'm running the Planning Department.

S.: You certainly are, and well too. That's all I have to say. I certainly appreciate this talk. It has done me good. Thanks a lot, Norm. Come in again if I can help you in any way.

Now perhaps all this seems stiff. Perhaps the idea of a supervisor talking to an assistant supervisor like this may seem odd. But the worker will take his review results much more seriously, if he knows that his supervisor and his supervisor's supervisor gets the same treatment, right on up the line. The discussions may be stiff. The criticism may be severe or mild. The man himself is inwardly pleased, however. He has had his few minutes of attention from the man above. That is human nature.

SUMMARY OF USE OF REVIEW SHEETS

It has been shown that review sheets can be graphically plotted to show changes and comparisons. It has been shown that the review sheet can be discussed only by getting down to the individual items. The words to use in discussion are written on the review sheet. There is no necessity for a review's being general and not directly specific. A general discussion with a person leaves him dissatisfied. A specific discussion and the citing of examples, if necessary (and they often are), will do the most good. The worker or the supervisor should not be asked to change. If he admits a fault, it should be left right there and not debated. The review sheet lets the man *know*

where he stands. This is very important. He knows that his advance depends on his improvement.

QUESTIONS

1. After what time should the first work-review sheet be made?

2. What two things must be done to the work-review markings before they are recorded for comparison with the test?

3. At what period is the second work review made?

4. What do small changes between work reviews indicate?

5. Name two good reasons for a change to the worse in work review.

6. What is indicated if the work review remains poor, even after the worker's transfer to a more suitable job?

7. What two things may be indicated if the work review improves after transfer of a worker to another job?

8. What is indicated by a self-review that is far above the supervisory review?

9. What is indicated by a self-review well below the supervisor's review, assuming that the supervisor's review was quite favorable?

10. What tendency in self-review may be followed by persons with an extremely high general intelligence?

PROBLEMS[1]

1. Make up three profile sheets. Use the material from the answers to the problem of Chap. XI. Plot your performance and personality, after adjustment, on one of these profiles.

2. Plot the results obtained in questions 3 and 5 of the previous chapter on another profile. Be sure to adjust each separately. Use different colors or marks for the three reviewers.

3. Average and adjust, together, the three review grades that were just used. Plot this profile on the third profile card.

4. What was the general tendency of each of the adjusted reviews to differ from the adjusted-average card profile?

5. Ask someone in your confidence to review you. Plot the adjusted grades on your profile card that you made out previously in question 1 of Chap. XI.

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[1] Answers to problems 1 and 5, if asked for by an instructor, will be treated in confidence.

CHAPTER XIII
COUNSELING

In the preceding chapter two factors were joined. The test results of personality and performance were compared with the actual qualities at work. The test gave the start for the first comparison. After this, it was a comparison from one work period to the next.

Sometimes an employee is doing his job passably yet something is wrong. It is beyond his supervisor's knowledge to determine just how to correct the failing. After all, the man is doing the job well enough; but the supervisor knows that he needs help. It is at this point that the company counselor should be called into the matter. Usually, the worker (or supervisor) is found to fit into one of the following types:

1. Undecided worker
2. Unhappy worker
3. Troublesome worker
4. Quitting worker

What can be done? The first step is for the counselor to sit down with the supervisor and find out his ideas. The second is for the counselor to acquaint himself with all records covering the worker's past history in the company. Lastly, the worker should be introduced to the counselor, and an immediate meeting of those two should be arranged.

UNDECIDED WORKER

The counselor must gain the confidence of the undecided worker before he can do anything at all. In the case of this type of worker, all that is necessary is to establish the fact that he does not know where he is headed in the company.

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All such questions as What are you headed for? Do you like mechanical work? What don't you like about your job now? should be so answered that the counselor can be sure that the worker does not know what he wants to do.

It is very important to realize that the worker may be unhappy and not merely undecided. He may be unhappy because he does not like his work, his pay, or some other factor. Assume, then, that these factors have been eliminated and that the worker is *definitely undecided* as to what he wants to do.

At this point the counselor will find the Kuder test of tremendous value. This test has been described in detail in an earlier chapter. The worker takes the test, which is scored immediately, while he waits; he goes out to eat, or otherwise occupies the short time needed for the scoring. The worker should not be allowed to watch the scoring, as this will usually worry him.

Take a mechanic as an example, to see what would happen.

Kuder Test in Counseling.—The results of the Kuder test showed the situation (page 177).

The results of the test show that the worker is interested in a mechanical-scientific-literary combination of activities. Certainly his mechanical work is not satisfying his literary interest. Writing novels would not solve his problem, as this would not give him much outlet to the mechanical-scientific bent. What to do?

The immediate solution is to test this man to see whether he really is high in all three preferences. So, four tests are given. The results have been shown on the Kuder profile. The tests were

Preference	Test	Grade
Mechanical	Bennett Mechanical Comprehension	3
Scientific	Stanford Scientific Achievement	2 −
Literary	O'Rourke Vocabulary	3 +
Literary	Michigan Speed of Reading	2 +

MUSICAL

ARTISTIC

LITERARY

SOCIAL SERVICE

SALES (Persuasive)

SCIENTIFIC

MECHANICAL

COMPU-TATIONAL

CLERICAL

GRADE

4 3 2 1 0

X = Kuder Test
O = Skill Test

O Vocabulary

Reading

Mechanical
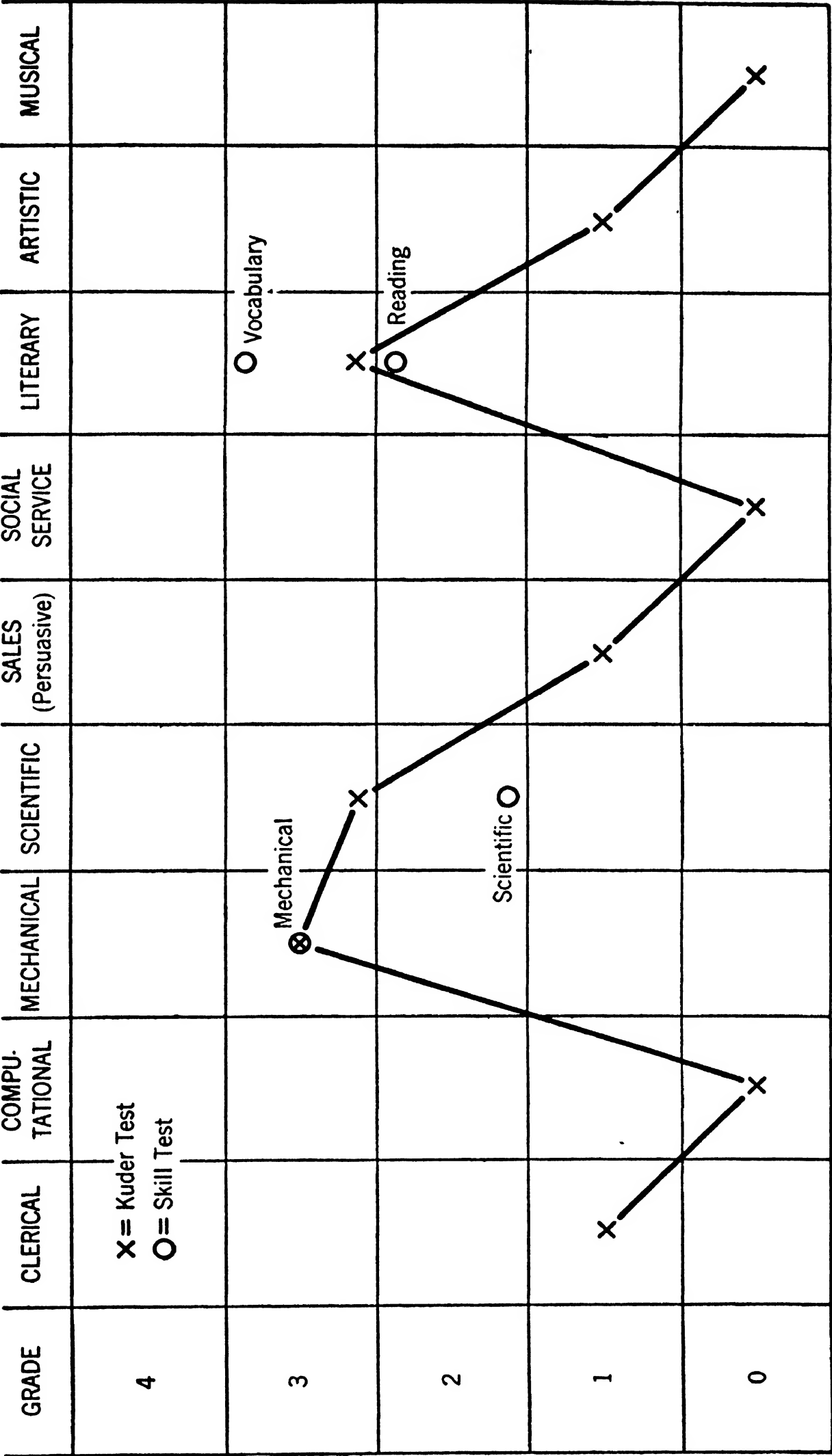
Scientific O

From these results, it would seem that scientific work was not the specific answer to this problem. Some combination of the mechanical-literary is indicated by preference and by indicated ability. Another sound conclusion is that full-time shopwork will not provide the answer. It will be an office job that will combine these.

It was known that there were a number of jobs that combined these two requirements. They were

1. Instruction-book writing (mechanical products)
2. Manual writing (in mechanical subjects)
3. Time and motion studies (shop and office)
4. Preparation of instruction courses (with some instructing)

Now the worker may be asked about these jobs. Would he enjoy one more than another? Does he like to teach others? Is he interested in more efficient methods?

The personality of the man must be studied carefully. If he is rather shy and retiring, the last two choices are probably not to be considered. If he is aggressive and gets along well with others, the first two will not fit his need.

By this time, the counselor will be well on the track of what the man wants. He should terminate the interview and make a definite appointment for a few days later. During this time he must discover other possible jobs and find which openings are available. Sometimes this may involve the accelerated promotion or transfer of other workers, to make the opening required and to satisfy all concerned as best can be done.

When the worker and the counselor next meet, a definite plan can be evolved, as the counselor knows the situation of the moment. Often it may be necessary to plan to make the move at a future time, when an opening will occur. Then, the counselor must follow up carefully, to make sure that the matter is not dropped. He should see the worker occasionally and encourage him to wait, when waiting is necessary.

This sort of case is very common among younger workers, although it is by no means restricted to them. A few satisfactory solutions will be reputation makers for the counselor. A few early failures will be hard to overcome later.

TYPES OF JOBS

Each of the nine Kuder classifications may be broken down into specific kinds or types of job. A manual is supplied with the Kuder tests, which specifies these jobs by title. While this list is extremely helpful, it is well to rec-

Classification	Subclassification (type)	Remarks or examples
Mechanical	Engineer	Design and simpler engineering
	Builder	Structural, building trades, etc.
	Assembler	Factory line production
	Operator	Driver, machine operator
	Maintainer	Repair and care
Computational	Accountant	Posting, billing
	Computer	Machine or hand
Scientific	Natural science	Biology, medicine
	Physical sciences	Chemistry, Physics, and skilled engineering
Persuasive	Salesman	Direct sales
	Manager	In any type of business
	Politician	Professional politics
	Lawyer	Especially in court
Artistic	Designer	Color and shape
	Operator	Painter, beauty operator
	Craftsman	Handwork, models
Literary	Writer	Fiction or commercial
	Actor	In plays
Musical	Instrumentalist	Pianist
	Singer	Professional
	Dancer	Professional
Social service	Doctor	Coupled with scientific
	Nurse	Of many kinds
	Teacher	In fields shown by other interests
	Social service	In hospitals, charities
	Minister	Often tied in with literaty interest
Clerical	Operator	Office machinery
	Carrier	Delivery, messenger
	Checker	Stock, records

ognize the general breakdown of each classification. After such a determination has been made, it is easier to select the job title itself. With this breakdown in mind, it may be well to consider another example of the Kuder test.

Another Kuder Example.—An engineer seemed somewhat unhappy because he was not "getting anywhere." It was determined that he was not all dissatisfied with his company, but with something that he could not define. He wanted more pay, but not unless he had a job that warranted it. However, he seemed to be stuck in the process of advancement. To discover what was the real trouble, a Kuder test was given with the result shown on page 181.

Here is a case very similar to the first one, but with one important exception. The result is mechanical-scientific-sales, showing a similar combination but with sales high, instead of literary interest.

Again, tests reveal the following skills:

Preference	Test	Grade
Mechanical	Bennett Mechanical Comprehension	3+
Scientific	Stanford Scientific Achievement	2
Sales	How Perfect Is Your Sales Sense?	3+

Ability in all three fields is clearly indicated. Neither engineering nor mechanical work is indicated, as no sales outlet is provided in such work as a rule. The man had no formal engineering education. This had been a handicap, as was shown by test. What jobs are open in this company? There are these:

1. Instructing mechanical personnel
2. Supervising mechanical or engineering personnel

The worker was asked how he would like instructing. His answer was that he enjoyed telling other people how to do things. He also enjoyed seeing how things worked and understanding the principles involved. Ideal for instructing! But, sad to say, he was sure he would *not*

GRADE | CLERICAL | COMPU-TATIONAL | MECHANICAL | SCIENTIFIC | SALES (Persuasive) | SOCIAL SERVICE | LITERARY | ARTISTIC | MUSICAL

X = Kuder Test
O = Skill Test

GRADE

4

3

2

1

0
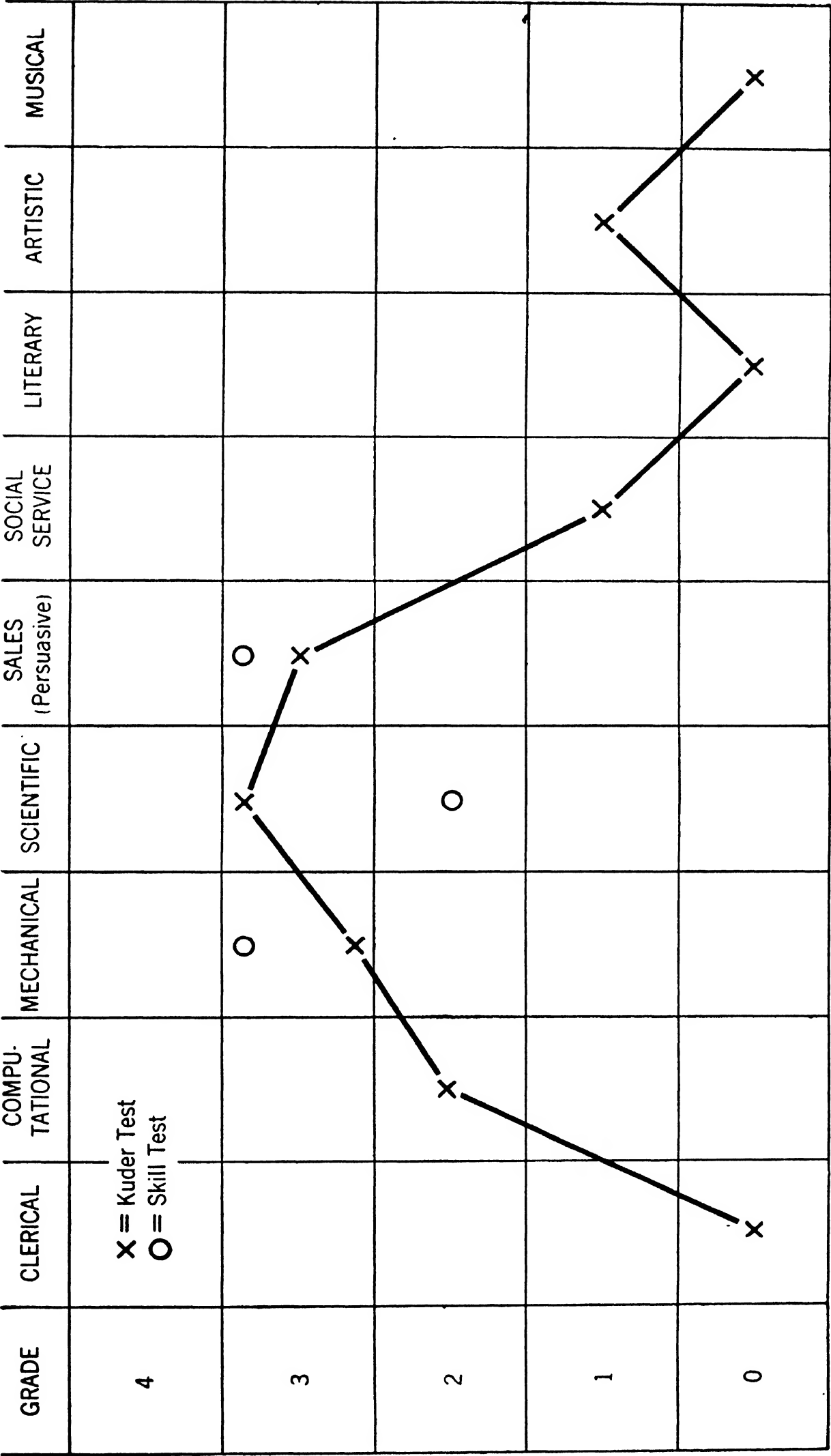
like instructing. The man did not seem to be an especially good supervisor. His Personality Index did show high social intelligence, but the result was not sufficiently high in other supervisory characteristics.

So, both these choices were out. He was then asked how he would like to sell mechanical products as a factory representative. He at once beamed and said that he had never thought of doing this. He wanted such a sales job. The more he thought about it, the better he liked it. "And they get good pay and are pretty much their own bosses," he said. But the company had no place for such a job.

The counselor recommended that he leave the company and suggested some associated company in which he felt that the man could do well. Did the counselor do the right thing? Certainly he did. The counselor must be honest with the man. When the story gets around, there may be a few who will want to follow suit. They trust the counselor because of his action. They will be satisfied if he convinces them that they have the right job already.

The worker who goes to another job in a company associated with his old company has become a real friend, who may someday repay his old company the favor. Early delivery of an order with his help might save many dollars. A frank statement to his friends of trouble with a product that he is selling may save more. The new company also has gained a valuable liaison man. In short, everyone is better off.

Thus, in such deserving cases as these, the counselor has two duties:

1. To put the man in a more suitable company job
2. To put the man in a job with someone else

If the man is just not fitted for anything better than he is doing, he *must* be handled diplomatically. The counselor then has a third duty, as well:

3. To tell him that he is best fitted to his present job.

THE UNHAPPY WORKER

The second type of worker requiring counseling is the unhappy worker. He is very much more difficult to handle than the undecided worker. One of the first considerations should be to find the underlying cause of his trouble. He may be simply undecided and so does not like his job. The treatment for this is precisely the same as for the undecided worker. Often the chief want is to be given attention. It is the counselor's place to give him every bit of attention possible.

In order to understand the reasons for complaints about work, it is well to list some things that are important to the worker. Pay is certainly one of them, although it is not by any means the top complaint in the average case.

Frequency	Complaint
Most frequent	Not enough left up to worker
	No chance for promotion
	Pay not high enough
	Incompetent supervision
	Poor employee facilities
Least frequent	Lack of sufficient information

The counselor must determine those problems which are making the worker unhappy. At first the worker may not want to use names. He will say that his supervisor is "O.K." Little by little, his confidence must be gained. If the counselor repeats any of the things and names of persons that the worker talks about, there will be trouble. The information will quickly leak back and will do untold harm.

Stop here and remember that the wise counselor *keeps his mouth shut.* The counselor may take any action he desires. He must do it in such a way, however, that the worker cannot possibly be involved. The usual cycle of the *poor* counselor is as follows:

1. Counselor starts job.
2. He succeeds in gaining information.

3. He keeps quiet about most of it.

4. He talks about his first interesting case, to show others how good he has become.

5. Information about nonperformance gets back to the supervisor at fault.

6. The supervisor reprimands the worker, who tells others not to trust the counselor.

7. Both supervisor and worker run down the counselor.

8. The counselor hears about it and spreads the story further, to show that he is right.

9. Counseling loses its usefulness to the company.

10. Counselor loses job.

In other words, the average counselor likes to gossip and he will get caught at it. He must learn to *keep confidences absolutely to himself.*

Let us return to the unhappy worker. He may be asked questions about his supervisor, company policies, pay difference, etc. Now the counselor may find out that the man has a legitimate reason to complain. What should he do? Should he agree with the worker? Should he steadfastly represent management and protect the company interest?

The counselor is not a judge. He is a middleman, who must relay information to the company as to how it can improve. He must relay information to the worker, so that he can improve. Although he is in an awkward position, he has several standard conclusions, which must be carefully worded when they are presented to the workers.

1. I think that you are justly treated.

2. Possibly you are not properly placed.

3. I think you should resign.

In the first case, the counselor should stick steadfastly to his point. He must try to bring the worker to the same conclusion. This cannot be done by argument, but by a leading discussion.

In the second case, the counselor is agreeing with the worker. He does not think that matters are going too

well as far as he can determine.   But what more can he say?   He cannot say or even hint, "Your supervisor is no good, I shall have him fired."   If he does this, the story will be circulated in a flash.   He cannot say, "I don't agree with company policies."

He must find a solution to the difficulty.   One of the best ways to do this is to say, "Your work has been good (satisfactory or what not?) according to your supervisor (the man that the worker is running down).   Apparently there is a personality difficulty that is due to difference of ideas.   Where else do you think you would prefer to work?"

If there is a place to which the man can be moved, the counselor should see that he is transferred.   Also the supervisor should be told that the worker "is not placed properly and should move to a more suitable job."   The supervisor's face is saved.   The worker's face is saved. The situation is temporarily repaired.

It is then time to find out something about the supervisor—not the next day, but as soon as the disturbance has subsided.   The supervisor may be perfectly correct.   If so, the worker will probably cause trouble again.   The next time the counselor should recommend to the worker that he resign.   If the worker does not follow this advice, the supervisor should be informed of what the counselor has told the worker.   The issue should then be forced at the *next* opportunity where the worker's action gives reason for discharge.

The third case is to advise that the worker resign. Before the counselor has a long talk with any worker, it is essential that he shall talk with the supervisor.   If the worker suddenly appears for a talk, it is essential that some reasonable excuse should be made so that the counselor can see the supervisor first.   One good way of doing this is to have a short talk and say frankly, "I should like to talk to you more about this.   I cannot, today.   I can see you at your convenience tomorrow.   What time would

you say?" If the worker says, "I suppose that you want to see my boss first," then the answer is, "Yes, that is a good suggestion. I will do it. Of course, I shall not mention that you have been here."

Now suppose the supervisor says that the worker is poor or completely unsatisfactory. He does not know what to do about it. The answer is not, "Well, why don't you fire him?" The answer should be, "Why don't you let me talk to him and see if I can find out what's wrong?" It will be a poor supervisor who will not be happy to be relieved of his burden—especially if he can trust the counselor. A suggestion to resign *must* be tactfully handled.

So the unhappy worker can be handled by these means or others that follow the same principles. These principles are

1. Listen to the worker.

2. Consult his supervisor cautiously, without making it evident that the worker is complaining.

3. Inform the worker of your honest opinion.

4. Don't let the worker, or the company, or its supervisors, down.

5. Keep the matter to yourself, but follow up all angles when opportunity permits.

TROUBLESOME WORKER

The troublesome worker (or supervisor) will usually be referred to the counselor by his immediate supervisor. In this case the worker is not the one who wants help. He is the one who requires apparent straightening out. It is the supervisor who wants help.

Naturally, there are many cases where the supervisor will simply tell the worker that he is through. This case will be treated in the next section, on exit interviews. In this case of the troublesome worker, the supervisor wishes to keep him for his good qualities but would like his poor traits corrected. The usual supervisor does not know how

to go about correction. It is not his specialty, and he sees but few cases. The counselor, on the other hand, sees many and may thus become capable through sheer practice if in no other way.

The problem to be worked out is one of rebuilding a personality. Let it be said here and now that *often this is totally impossible.* In the few cases where it really works, however, the outcome is very gratifying. There are several principles that must be recognized.

1. The trouble must be traced down to one common factor (or, perhaps, two).

2. The worker must understand the factor (or factors) *and admit* the difficulty.

3. The worker must want to correct it himself.

If there are a number of difficulties or common factors that are not alike but are all important, the problem is almost insurmountable. Fortunately, however, it is usually possible to work them down to one basic factor.

Here is the procedure for discovering these facts. The work-review sheets of the worker must be available. What they show may be the following record:

Main heading	Subheading	Reason for low grade
Quality	Accuracy	Frequent errors
Job interest	Enthusiasm	Slow to excite
	Concentration	Often sidetracked
Intelligence	Learning	Rapid but forgets
	Observation	Misses details

The combination of these five failings might add up to one common fault—*not paying attention.* Now, the worker may be told that he seems not to be paying attention and that this is doing him harm. Of course, he will hear what is said; but, if he is thick-skinned, the meaning of the words may not even penetrate to his thinking mechanism. Most people do not want to hear anything uncomplimentary

about themselves. They seem to be completely deaf in such matters. *Praise the man first*, and his ears will open!

The first step has been taken. One general factor has been found. Now, how to get the point over? Perhaps the best way to start—and this works— is to have the man review himself. Let it be done right then, on the spot. This will immediately tell the counselor how to proceed. The worker will do one of three things:

1. Agree in his rating within normal limits.
2. Rate himself higher than did his supervisors.
3. Rate himself lower than did his supervisors.

Take the first case. If he agrees fairly well, the battle is half won. Freely and of his own volition, without undue prompting he must be willing to admit that he has the faults. Then the counselor must say, "Do you know how this can be corrected easily to your own benefit?" If the answer is a halfhearted "No" or "I guess I do," there may be little that can be done.

If the worker is interested, he will facially show definite interest. From there on, progress will be easy.

The troubles must be talked over and over from every angle of attack. Frequent reference to good points must be made. It is a question of showing how the regions of weak performance can be made as good as those of the best characteristics. A good tool to use is the suggestion that the man need not worry about his good characteristics. For example, suppose that he is low in leadership. If he has high social intelligence, tell him to let go in this respect. Tell him he cannot possibly hurt the feelings of others by pushing himself a little harder to be a better leader. Then, again, if he is hurting others by driving them too hard, tell him to ease up a little and concentrate on being more friendly. Tell him that he has too much drive in that direction, which, used otherwise, is fine. Lowering drive won't harm him at all.

The counselor must suggest a concrete plan of action. Most important, a definite time must be set for discussing

the matter. Just before each later discussion the super-visor should be consulted, to see whether he has noticed any improvement. Even a very small amount would be an encouraging sign. Heap on praise for even slight gains.

Suppose that, in the second case, the worker rates him-self higher than his supervisors have done and will not admit any fault. If it is obvious that he has the faults there is trouble ahead. Once in a while a *vigorous con-demnation* of the fault will reach the worker. It will make him very angry, too; therefore, this course is dangerous It should be used only on obvious extroverts—those who appear to be very arrogant, loud, and thick-skinned. It should never be applied to an introvert—a shy and sensitive person—who might be permanently injured by it. For that reason, in such an instance it is better to drop the whole matter. Remember, too, that the intorvert is the one who will *argue at the drop of a hat*. This argumentative inclination is not the sign of the extrovert. An extrovert does not want to protect himself. He is already satisfied and that satisfaction is his thick skin. Only loud, long and rough talk can dent it.

The last case is that of the worker who rates himself low. His own grades are, at least, one unit under those in his supervisor's review. He is beating himself and needs all kinds of encouragement. All the praise that can be mus-tered will help but little. In a few cases, however, he will catch the idea and ask for help. He must be made to see that he will be helping himself, his family, his reputation and his pay. The counselor will have to call, besides, for all the help he can get from the man's supervisors, as a single word or action of condemnation will serve to nullify all progress.

So the man who is "not paying attention" or who is troubled by any other common factor of weakness that causes him to be less useful than he should be can be treated as follows:

His rating compared to supervisor's	Kind of person	Reaction	Remedy	Possible chance of improvement
Same	Any	Wants help	Go over each fault and suggest action	Excellent
	Any	Indifferent	Try to interest him	Doubtful
Quite high	Any	Wants help	Go over faults	Good
	Extrovert	Indifferent	Blast in faults	Fair
	Introvert	Indifferent	End conference	None
Quite low	Any	Wants help	Praise and suggest action	Good
	Any	Indifferent	Drop the matter	None

There is absolutely no compulsion on the counselor to correct the man. He should be cautious about attempting it. Under all circumstances concerning the troublesome worker, it is essential to take the results back to the supervisor. Discuss the principal results with him. The supervisor must be praised for his part in the matter. If improvement results, the counselor must swallow his pride and give all credit to the supervisor. This is hard to do. It will, nevertheless, build up the counselor tremendously in the eyes of everyone.

THE QUITTING WORKER

The worker who is quitting definitely should be given an exit interview before he leaves a company. This is a job that will be of special benefit to the counselor. It will reveal many facts that can be beneficial to the company.

The results of the exit interview should be given directly to the management. This may be done by two methods: (1) by full information on the specific case if it warrants such attention; (2) by making a continuing compilation of the reasons for quitting over a certain period (say the last

6 months or 1 year). This is statistical proof and shows management where weaknesses lie. The counselor should suggest means to correct each fault.

The quitting worker is quite ready to talk, in most cases. He has nothing to lose. In many cases, if the counselor handles things correctly, it will be found that the worker is sorry he is quitting. He has satisfied his pride in taking final action. If he is asked to return, he feels that he is valuable. Many times the supervisor will be glad to take him back. The example of a man returning has a marked effect on other workers. They will feel that, if he is willing to come back, they are working in a good company. Otherwise, why would he have returned? Often workers quit when they are angry; and, to save face, they are willing to go through with it. The supervisor wants to save his face, too; so, if it were not for the counselor, many a good man might be lost, with consequent expense.

The supervisor must always be more than willing to take a man back—provided that the man is a good worker. In this case, the counselor's office may become a neutral ground where reconciliation can take place. The supervisor and the worker patch up their trouble there, while the counselor is a quiet spectator.

Precaution must be observed in talking with a worker who is definitely a bad employee. In this case the interview will probably be very unsatisfactory. It may give the worker just one more opportunity to tell the company where to head in. Nevertheless, this will back up the supervisor in his decision in dismissing the man. The bad worker may make dozens of excuses, in the hope that the counselor will force his previous supervisor to take him back. He may piteously plead his plight. This must be carefully handled.

TRAINING THE COUNSELOR

The good counselor is a most difficult person to find. He must be a person who has a good understanding of human

nature. He must be absolutely free of petty political ambitions within the company. A person with training in psychiatric work might be considered; but, under no condition, should psychiatry, as such, be practiced. The counselor is treating cases of normal difficulty. Such cases as may need expert help should be turned over to the best professional psychiatrist in town—one who is well recognized within the medical profession.

To train the counselor is difficult. It is, perhaps, best to start with exit interviews and then work into undecided employee cases, a little at a time. In the meantime, the person must make continual contacts with every supervisor in the company. Unhappy and troublesome workers should be taken by the counselor only after a great deal of study and thought. The supervisors should be encouraged to discuss their own handling of such cases. Finally, the counselor can come into his own. He should be instantly replaced if he should show political ambition or a loose tongue. He is in a position where he can be dangerous for any company, but one where he can do great good, also.

SELECTION OF SUPERVISORS AND EXECUTIVES

The counselor is, perhaps, in the best position in a company to make suggestions for the selection of supervisors and executives. Of course, he himself will not select them. That is a job for the company executives; but he is in an ideal position for making company-wide selection lists. Let this be kept in mind in reading the next chapter.

It should be evident that the counselor must have immediate access to all company personnel files, for prompt treatment of each individual problem. It is the counselor who should periodically make lists of candidates for promotion to the more important supervisory jobs usually above the level of group leaders or minor foremen.

SUMMARY OF COUNSELING

It will be well to review some differences in the four types that require counseling and in the treatment for each.

Type	Usually starts with	Information to	Precautions
Undecided worker	Worker or supervisor	Worker and supervisor	Be sure skills and interests agree
Unhappy worker	Worker	Worker	Extreme confidence essential
Troublesome worker	Supervisor	Supervisor	Don't let supervisor or company down
Quitting worker	Firing or quitting	Management	Don't save a bad employee

QUESTIONS

1. What are the four types of problem worker or supervisor?

2. What are the two most general recommendations to an undecided person?

3. What is the most frequent complaint of an unhappy worker?

4. What is the most common reason that counselors lose standing?

5. A worker appears without warning before the counselor with a complaint. What is the counselor's first step?

6. Who usually refers the troublesome worker to the counselor, or does he usually bring the matter up himself?

7. What, as a counselor, would you do with a man who rates himself low in comparison to his supervisors' review, when he himself wants help?

8. A worker rates himself in the same manner as do his supervisors. He is poor in several respects. He is indifferent to the counselor. What would the counselor do?

9. Who is best qualified actually to select a supervisor for a high-paying job?

10. Should information secured from a quitting worker be supplied directly to the worker's supervisor for him to pass upward? If not, who should get it?

PROBLEMS

1. A person showed a high interest in music and mechanics. List briefly the types of job to which he would be best fitted if he worked in either of these fields.

2. A man showed high interest in scientific and persuasive

classifications. He disliked gardening and animals. In what type of job would he be satisfied, if his abilities fitted his interests, as they often do?

3. A woman was high in social service, as well as in scientific interest. She said that she cared nothing for mechanical things or how they worked. What job would she be well fitted for by her interests alone?

4. In what interests should a watchmaker be high? List types in each.

5. List interests of your own by classification and the appropriate subclassification or type. Place those of great interest in one group. Those of average interest in a second group. Those you dislike, list in a third group, by main classification only.

FOLLOW-UP—KEY TO TRAINING

It has been shown that the training program is part of a chain of events. This may be summarized as follows:

1. Job requirement
2. Interview
3. Test
4. Training
5. Work review
6. Counseling
7. Exit interview

It is necessary to have a number of records from which to take this information, and to have these records set up in a central, written, record file. In a large company it is also necessary to have some punched cards for statistical handling by automatic machinery. The determination of which records must be so arranged is a matter for the individual company to decide.

RECORD FORMS

Each record will be shown, after which a method of correlation of all the records will be suggested.

Job-requirement Form.—This record must be in the hands of the interviewer. It gives minimum requirements

JOB REQUIREMENT

Job title: Maintenance Mechanic 144 Dept: 62 Location: Cleveland

Starting wage: 60–80 cents/hr. Top wage: $1.00/hr. in 2 years

Next job: Maintenance Foreman 181 Wage range: $200–300/mo.

Job description: Overhaul of lathes, grinders, and other automatic production machinery. Must be familiar with electric motor overhaul.

Previous experience: Two years operation or repair of machinery.

Education: High school Age: 25–50

Job Interest 2 Intelligence 2–3 Social Intel. 3 Leader 1 Plan. 2 Drive 2 F.T. 3

Knowledge of Job: 3 Test: Mechanical Comprehension

Remarks: Foreman does not want engineering college graduates in training. Previous experience has shown that it takes one year for man to learn job.

for a job, test requirements, wage and salary information, and a job description. It seldom changes, except when the job is periodically modified, every year or more.

The information on such records serves to acquaint the employment department with those facts that the interviewer must know. It also answers some questions that the applicant may ask.

Interview Form.—The interviewer must supply certain information to the supervisor. Such information can be supplied on the Interview form.

<div align="center">INTERVIEW RECORD</div>

Job title: Maintenance Mechanic 144 Dept: 62 Location: Cleveland

Name: Jones, John Z. Wage offer by employment: 70¢ By supervisor: x

Previous experience: 5 years lathe production operation. 1 year as maintenance man on automatic screw machines.

Education: 3 years high school   Age: 26

	Knowl. of Job	Job Interest	Gen. Intel.	Soc. Intel.	Leader	Plan	Drive	Follow-Through
Required	3	2	2–3	3	1	2	2	3
Interview	3	3	3	2	?	3	3	2
Test	4	3	2	2	2	3	3	1

Knowledge-of-job test: Mechanical Comprehension

Medical examination: "2" Slight limp due to previous accident.

Remarks: Wants 80¢ wage.   Told him 70¢ was highest with his experience

Medical: V. P. Zerry, M.D. Interviewer: J. P. Love Supervisor:

Tests are taken after the preliminary interview. Results are given to the employment interviewer either during the interview or immediately after it, depending upon the policy adopted. Both interview and test grades are added to the record before the applicant is turned over to the supervisor. The medical examination takes place after interview. It may be either before or after the supervisor passes on the applicant, depending upon company policy.

The applicant cannot be hired until the three signatures appear at the bottom of this card. For example, if the doctor finds the applicant unsuited, he so indicates and initials the remarks but does *not* sign the card.

Testing Form.—It has been shown that the test results are added to the interview record. The test itself should be filed for future reference. Test-results are also recorded on a form, to be shown later. Thus, there need be no test form as such.

Training Forms.—Two types of grade sheet are used in training. The first is a sheet showing the grades of an individual.

INDIVIDUAL TRAINING SHEET

Name: Jones, John Z.   Course number: 23 Units 1–5

Department: 62 Location: Cleveland Training: Cleveland, Bldg. 14

Unit	Instructor	Perform-ance	Person-ality	Remarks
1.	A. B. Stark	2	2	
2.	"	3	3	Soldering poor .
3.	V. T. Malone	1	2	Poor attention, seems sick
4.	"	x	x	Absent, bad cold
5.	"	3	2	Final examination, 3
6.		2+	2+	Course grade
7.				

These training grades go in the personnel record of the individual after the supervisor has seen them. The supervisor is responsible for checking with the training coordinator on any items that seem to have been low in training. If the supervisor feels that these items have been mastered, the training coordinator checks them off his follow-up sheet. If further training is required, the worker is sent back to another unit or units of the course (as indicated) when next the course is given.

Another form is shown on page 198, which may be used in addition to or instead of the first individual trainee grade sheet.

This form has the principal advantage of combining the course grades for statistical information. It is easy to make out. Its principal disadvantage is that it is not suitable for addition to an individual's personnel record.

The results may easily be shown on the individual summary sheet, to be discussed. Also, this form does not permit the entering of many remarks on the daily difficulties encountered by the trainee.

TRAINING-COURSE GRADES

Course number: 23 Location: Cleveland Date: 12-27-44 to 1-7-45

Instructor number	44	44	67	67						Final average and remarks
Unit number	1	2	3	4	5	6	7	8	9	
Name				Grades						
Jones, John Z.	2/2	3/3	1/2	xx	3/2					2+/2+
Lemon, I. M.	3/2	3/3	3/3	2/3	3/3					3/3
Moroon, T.	2/2	2/1	2/1	x	x					Released
Thomis, K. L.	2/1	2/2	2/2	2/2	1/2					2/2

Show performance/personality grade thus 2/2.
Over, for remarks. Back of sheet is blank for special remarks, if needed.

Often this form is made by the training-department records group. Data are taken from the individual training sheet, which is the instructor's one record.

Work-review Forms.—These forms have been fully explained in Chap. XI. The work-review form and the profile forms are kept in the individual's personnel file.

Counseling Form.—Counseling is a specialized job, which does not involve a large percentage of the workers. The form is usually a report, which is kept in the counseling files. There is little need for special forms for this purpose.

Exit-interview Form.—As is the case in counseling, there is little need for a form to guide the exit interviewer. A record of such interviews that summarizes each interview should be kept. Whether or not the worker decides to stay, this form is placed in the counselor's records.

At suitable intervals, a management report, which would include all phases of the counselor's work, should be presented. It is the Dissatisfaction Report that is compiled by the Counselor.

DISSATISFACTION REPORT

Location: Cleveland   Period covered: July 1–15 1944

Number of exit interviews: 6   Past year average: 7

Number	Complaint	Remarks and possible solution
2	Poor ventilation. Office 224, building 7	Fan has been ordered. Ventilation very bad now
6	Assemblers, final assembly building 16, 2nd floor, piecework rate too low	4 quit, 2 persuaded to wait to see if rate is increased. Union had approved rate. Work has since become more difficult. New time study in progress and should be speeded up
1	New supervisor is not qualified	Worker feels he should have had job. Work review indicates proper choice was made. Worker will probably quit
2	Food in Cafeteria A very poor	Complaint received from two quitting workers. Food is satisfactory. This is not principal reason for quitting
1	Discharged supervisor feels he can reform if allowed to return to work	Past record indicates that supervisor had promised to cut out heavy drinking on two occasions
	Rumor in plant that Assembly line 3 is to be closed soon	Recommend that assemblers be told that this is not the case, but that new product will shut down line 6 for three days for conversion
	Newspaper report that J. N. Jones has been arrested for leaving scene of accident	Investigation reveals he left scene of accident with seriously injured driver of other car. Witness reports show other driver probably at fault. Both released on bail until recovery allows trial
	General misunderstanding of new vacation policy recently circularized	Suggest full explanation be published in house organ. Some believe that personal absence time allowed may be added to vacation after second year

The management of the company is informed of the dissatisfaction, so that action can be taken where indicated.

Information may be secured from counseling, exit interviews, supervisors, and comments from workers, or from other sources.

APPRAISAL COMPARISONS

Record forms have been shown from which the appraisal of various situations and persons may be secured. The most important form is the appraisal of the individual.

Appraisal of the Individual.—Each individual should have a summary card on which appears information derived

APPRAISAL OF INDIVIDUAL

Name: Jones, John Z. Age: 26 Sex: Male

Title first job: Maint Mech 144 Present job: Maint. Foreman 181 Jan 45

Location and department: Toledo 62 Present location and dept.: Cleve. 62

Month-Year	Required for job	Interview	Test	Training	3-months review	Yearly review	Supervisory training	Required supervision	3-months review	
	1-42	1-44	1-44	1-44	3-44	12-44	1-45	1-42	4-45	
Performance:										
Average	3	x	x	x	3 −	3	x	3	3	
Quality	3	x	x	x	3	3	x	3	3	
Volume	2	x	x	x	3	3	x	2	3	
Knowledge of Job	3	3	4	2 +	2	3	3	3	2	
Attendance	3	x	x	x	3	2	x	3	3	
Safety	4	x	x	x	2	3	x	4	3	
Personality:										
Average	2	2	2 +	2 +	3 −	3 −	2	3	3	
Job Interest	2	3	3	x	3	3	x	3	4	
Intelligence	2-3	3	2	x	3	3	x	3	3	
Social Intelligence	3	2	2	x	3	3	x	3	3	
Leadership	1	1	2	x	2	3	x	3	3	
Planning	2	3	3	x	2	2	x	2	2	
Drive	2	3	3	x	3	2	x	3	2	
Follow-through	3	?	1	x	2	2	x	3	3	
Medical	1	2	x	x	x	2	x	2	x	

See back of sheet for remarks, left blank for this purpose.

from many of the records just described. It is from this record that lists of potential supervisors and potential executives can be made. Some will be eliminated from the lists when selections are to made for any new opening, because of such factors as lack of knowledge of a language for a foreign post, lack of highly specialized knowledge for a position in another department, etc.

Many data are placed on these sheets. How the individual stands can be told at a glance. The form also shows the accuracy of interviewing, testing, and training when a number of such cards are compared.

In some cases more rapid selection can be made for promotion purposes merely by reference to the performance and personality averages. After these cards are selected, any unsatisfactorily low scores within these two main categories can be used as a further means of elimination.

Appraisal of Interviewers.—The review-sheet results that reflect the work of an individual are the criterion of comparison of interviewers. Although a form for this purpose is not essential, such a form will show the method of appraisal.

<div align="center">

INTERVIEWER APPRAISAL

Date 4/15/45

</div>

Interviewer: White, Z. X. Location: Cleveland Department: 14

Applicants interviewed last 3 months: 200 Hired: 130 Left: 20

Employee	Performance/personality review	Performance/personality interview	Interview deviation, high	Interview deviation, low	Remarks
Johnson, A. A.	2/3	2+/3	.3/	. . .	
Smith, Z. Z.	3/3	3/3	. . .	. . .	Quit
Thomas, X. X. . . .	4/3	3/2	. . .	1/1	
Zerks, T. T.	2/3	2/2	. . .	/1	Discharged
Zycoff, L. N.	1/2	2/1	1/	/1	
			1.3/0	1/3	

Average deviation: .3/0 high .2/.6 low.

A deviation is a difference of one point between each interview grade and the work-review grade. A plus (+) or minus (−) counts .3 of a deviation. Thus, the interviewer misjudged performance by .3 high and .2 low. He judged personality always low by a .6 point average. The work review used for this purpose is the 3-month review. Yearly reviews could be used, but this leaves too long an interval between interview and appraisal of the interviewer's job.

The ideal interviewer would be zero low and zero high. If the high and low deviations are equal, this does not mean that the interviewer is accurate. It means only that his average is neither high nor low.

The number of applicants interviewed, the number hired, and the number who have left in each 3-month period is also shown. From these figures a good comparison of interviewers can be made. This information should be available to the interviewer, so that he may see whether he is doing a good job and on which side his estimates fall.

Where large numbers are hired by interviewers, it may be best for this appraisal to take a sample of a sufficiently large group to represent the whole.

Some interviewers may have poor appraisal records. It is well to have them make comparisons of each individual item on the individual's appraisal form, to see where they can improve.

Appraisal of Tests.—Tests can be appraised in the same way as the interviewer. The 3-month work review can be used. For certain other purposes a yearly review can be used, if it is felt to be more accurate for more difficult jobs, which require a year or more to learn. Here, again, the method can be shown by a form. The information is taken from the individual's appraisal form as before.

The ideal test would show very small deviations. Limited appraisal of this test would indicate that it did a good job. It also indicates that it tends to be a little low. In this case the mid-score of the test and, likewise, the equiva-

lents for grades might be slightly adjusted for better measurement.

TEST APPRAISAL

Test: Special sales Form: A Date: 4-7-45

Job title: Salesmen 188 Individuals in departments: 77 and 78

Employee	Review perform-ance	Test result	Test deviation, high	Test deviation, low	Remarks
Black, H. M......	2 −	2 +	.6		
Donels, P. S......	3	2 −		1.3	
Edwors, G. H.....	2	1		1	Discharged
Frankls, T. T.....	3	4	1		
			1.6	2.3	

Average deviation: .4 high .6 low.

The test might have a standard deviation of ten points and a mid-score of 70. Thus, 2 equals 70, 3 equals 80, and so forth. Using the performance-review data as standard, the test result is .4 high and .6 low in deviations. The average high deviation should be .1 SD higher; the low .1 SD lower to center the error. One-tenth of standard deviation equals 1 here. Thus, the new norm should be 69 and not 70, to raise the single unit grades.

It may be that the test does not show an exactly uniform deviation in all the unit grades. Thus, it might be found that tabulation will show best how to do this.

Review grade	Average test deviation, high	Average test deviation, low	Present score	New score
4	.5	1.1	90	87
3	.2	.6	80	78
2	.4	.6	70	69
1	.5	.5	60	60
0	.4	.2	50	51

This table shows that the standard deviation should have been 9 and not 10.

In other cases, it may be that the deviation is *not* quite uniform in score between grades. The deviation might range from 12 at the top to 9 at the bottom, for example. The method shown above will help find this, too, where it exists.

Appraisal of Job Limits.—The limits may be set for any one job of the various characteristics of performance and personality. A survey of those who have resigned or have been discharged will show the indicated limits.

JOB-LIMIT APPRAISAL OF TURNOVER

Job title: Mechanic 177 Department: 80-81-86 Date: 1-7-45

	Number of turnover workers shown for each grade					
	0	1	2	3	4	Suggested grade limits
Quality................	3	10	4	0	0	2
Volume................	4	8	3	1	1	2
Knowledge of Job......	13	3	1	0	0	1
Attendance............	8	4	3	1	1	2
Safety................	2	8	7	0	0	3
Job Interest...........	0	12	5	0	0	2
Intelligence...........	2	5	6	0	4	2-3
Social Intelligence......	1	3	3	8	2	1-2
Leadership............	0	10	5	2	0	3
Planning..............	1	13	3	0	0	2
Drive.................	8	4	3	0	0	2
Follow-through........	2	8	6	1	0	3

In two cases it was found that an upper limit also should have been set. In other words, there was a high number of resignations or discharges in the upper regions in the two cases only. The lower limit is set so that most of those resigning or being discharged would be below that limit. Initial selection previously eliminated a number in the lower brackets (especially at 0), who were not hired. If everyone had been taken, there would be a high loss at the 0 grade.

Another job-limit appraisal can be made for those employed at present.

JOB-LIMIT APPRAISAL OF EMPLOYEES

Job title: Mechanic 177 Department: 80-81-86 Date: 1-8-45

Factors	Number of workers on review at each grade					Suggested limit
	0	1	2	3	4	
Quality........................	0	0	4	3	2	2
Volume........................	0	2	2	5	0	2
Knowledge of Job.............	0	3	5	1	0	1
Attendance....................	1	0	5	2	1	2
Safety........................	0	0	1	7	1	3
Job Interest..................	1	4	3	1	0	1
Intelligence..................	0	1	6	2	0	2
Social Intelligence...........	1	3	5	0	0	1
Leadership....................	0	0	5	4	0	2
Planning......................	0	0	4	5	0	2
Drive.........................	0	1	2	6	0	2
Follow-through...............	0	0	1	6	2	3

Some of the lower limits have been reduced in this comparison. Combining the results of the two forms, performance should be 2, 2, 1, 2, 3, and personality should be 1, 2-3, 1-2, 2, 2, 2, 3. The numbers with dashes indicate the upper limit allowable in two cases only—Intelligence and Social Intelligence. In all other cases, the upper limit is not specified.

Appraisal of Training.—It is difficult to appraise the difference between no training and good training. This involves a careful check of employees who have been trained and those who have not. What is desired is a comparison of training grades with review grades—the standard. It is rather difficult to have the instructor grade the student in other than a single performance grade and a single personality grade. However, these can be compared from the data taken from the individual's appraisal card shown on page 206.

It is worth making the comparison to see if the course is showing up the good and poor workers *before work*. The

poor ones should be eliminated in training and not later, during the first 3 months, with consequent additional learning losses. Improper training will show poor correlation between training and working grades even after 3 months. If training grades are uniformly very high in comparison to work grades, the training is probably too easy and poor. No course should require a grade of 4 for passing. Jobs that must be learned well before work should consequently have harder examinations, with passing at the 3 (or 2) level. The work will be judged on the same high standards, and the two should compare properly.

TRAINING AND INSTRUCTOR APPRAISAL

Course: ___230___ Units: ___1-12___ Location: ___Cleveland___ Date: ___2-5-45___

Instructor: ___XX___ Department: ___X___

Individual	Perform-ance/per-sonality training grade	3-months review	Training deviation, high	Training deviation, low	Remarks
Black, L. L........	2/3	2+/3		.3/	
Larkin, S. A......	3/3	3/2	/1		
Morse, K. L......	2/2	3/2		1/	Discharged
Suffen, H. Y......	3/2	2/3	1/	/1	
			1/1	1.3/1	

Average deviation ___.3/.3___ high, ___.3/.3___ low.

Appraisal of Instructors.—The same form as that just shown is used for instructor appraisal. The only difference is that the average of the grades for each individual by *one given instructor* are compared—sometimes for several courses.

Evidently this instructor, in the small sample shown, has graded personality accurately. Performance grading is almost one unit of deviation too high. This may be due to either the course or the instructor. However, the course appraisal with various instructors has just been made. It shows closer correlation than the performance

grades of this instructor. It may happen that there is an equal number of high- and low-marking instructors. If so, difficulty will not show up in course appraisal until after comparisons of instructors are made. Thus, this record is necessary as an adjunct to the training appraisal.

TRAINING AND INSTRUCTOR APPRAISAL

Course: 230 Units: 1, 2, 3 Location: Cleveland Date: 1-3-45

Instructor: Teems, H. N. Department: 114

Individual	Performance/personality training grade	3-months review	Training deviation, high	Training deviation, low	Remarks
Black, L. L........	4/3	2+/3	1.6/		
Larkin, S. A......	3/2	3/2			
Morse, K. L......	4/2	3/2	1/		Discharged
Suffen, H. Y......	3/3	2/3	1/		
			3.6/0	0/0	

Average deviation: .9/0 high, 0/0 low.

Appraisal for Advancement.—The individual appraisal form is the principal form. From this assembly of information can be drawn lists of workers to be promoted to supervisory positions. Supervisors can be selected by more rigorous standards for promotion to higher supervisory positions. Some information will have to be added to that shown on the card before final selection can be made. The selection of supervisors is often hurriedly done without this information. Lists should be made at regular periods, preferably after a review period. These lists can be made in the form shown on page 208.

This form, with all pertinent remarks, should be discussed by the executives. Each places a selection order number beside each man's name. If the choice is unanimous, the selection is easy. If this is not so, it is the place of the principal executive to make a choice or to decide to hire a person outside the company to fill the job. Selec-

tion order has been shown as it might have been marked by one person.

ADVANCEMENT APPRAISAL

The following individuals exceed minimum performance and personality standards set for the position of: Factory Manager, Rio de Janiero Plant.

Name	Per-form-ance review average	Per-sonality review average	Selec-tion order	Remarks
Bulwink, H. L.....	3	4	2	Cannot speak Spanish. Is especially qualified in factory supervision required at the new plant
Morris, T. Y. M...	3+	3	3	Speaks Spanish fluently. Is not acquainted with product to be manufactured but is qualified in general factory management. Weak technically
Slothe, V. X.......	4	3+	1	Speaks Spanish passably. Is acquainted with new product technically but production experience is somewhat light. Is well acquainted with labor problems as his special interest. Handling of labor situation in his department in December, 1944, especially well done

SUMMARY OF FOLLOW-UP

Forms are a necessity for recording the results of interview, testing, training, work review, counseling, and exit interview. Suggested forms have been shown where required.

Appraisal is necessary to act as a follow-up check on the three processes—hiring, training, and working. It checks on both the individual and the process itself.

QUESTIONS

1. Whose signatures are required on the interview record?

2. What written report is made of exit-interview data?

3. Will an interviewer with large high or large low deviations be most likely to hire unsatisfactory workers?

4. What would you do if a test showed large high and low deviations of equal magnitude?

5. What would you do if a test showed large low deviation and no high deviation?

6. On what types of personality classifications would there be a high limit for a supervisory job?

7. What is the name of the form used for instructor appraisal?

8. What should be done to the review-sheet check marks of three reviewers before placing the results on the appraisal-of-individual form?

9. How frequently would you judge that job requirements would be changed?

10. Of what use is the individual-training sheet, as all this appears on the training-course grade sheet?

PROBLEMS

1. List a number of items, other than information secured from those leaving a company, that you would show on a dissatisfaction report.

2. Make a copy of an interviewer-appraisal form. Fill in information required from the following data.

Individual	Review	Interview
Worker 1	2/3	1+/2
Worker 2	3/3	2+/1
Worker 3	3/2	3/2−
Worker 4	2/2	3−/1+

3. Make a copy of the test-appraisal form.   Fill it out completely from the following data.

Individual	Review	Test
Worker 1	2 −	3 +
Worker 2	1	0 +
Worker 3	4	4 +
Worker 4	2	2 +
Worker 5	3	3

4. With the information developed in the previous question, how would you adjust a test with present scores of 50, 40, 30, 20, 10 for the grades of 4 to 0?   It is true that the data are not extensive enough to do this job accurately.

5. What will happen in minor jobs if there is no upper limit for job grades?   Also, do you believe in the policy of hiring college graduates in large numbers to start from the bottom? Explain both briefly.

CHAPTER XV
SUMMARIZING THE PROGRAM

Costs were discussed in Chap. I. Indication was given of the savings that may be made. Any training and testing program must stand on its own feet. These are the ways in which this can be done.

TESTING AND TRAINING JUSTIFICATION

Testing is justified by the elimination of the cost of hiring those who would soon be eliminated in training. Some of the training cost will be saved, also. Basically, testing is aimed at decreasing the turnover rate.

Training has two aims. The first is to decrease the turnover rate, which is accomplished by encouraging workers to get started properly. Good training reduces complaints by supervisors and the otherwise early elimination of very slow learning workers. The second aim is to reduce learning losses. These are composed of initial spoilage and slowness, and of taking too much of the time of fellow workers and supervisors.

Thus, it is essential to keep careful track of the *turnover* rate. Each department's turnover should be continually examined from the time that training starts. If turnover does not decrease, something is wrong. Also, the *production* of new workers should be checked before training starts and then after it gets under way. The production of new workers should increase to standard more rapidly than before.

The increased costs of testing and training should be compared with these two savings. Use like industries and industrial averages for all comparisons from this day onward. *They are the one true measuring stick.*

SELECTING TESTS

Suggestions for a positive test program have been given. It was recommended that Personality tests be given, to be followed by one skill test. The results of these tests must be correlated with actual performance on the job. (1) Higher test scores must correspond with better work on that of the job which is being tested. (2) The passing limit of a test must be determined. The passing limit is determined by taking the lowest scores of satisfactory workers and the actual scores of quitting or unsatisfactory workers. Limits are then set for the test in any one department.

If tests do not correlate properly with the actual performance, the test must be changed. Personality and indicated skill must be used together in these comparisons.

Acceptable test scores may be raised somewhat when the labor market is good. When labor is more difficult to get, the passing score can be lowered slightly, to secure a higher percentage of acceptable workers. Then, if the work remains the same, the turnover will be higher, with poorer worker material.

TRAINING

Supervisors make the best instructors. They must be carefully trained before being allowed to instruct. The instructor must be checked out by the training department before he is allowed to go ahead on his own. If the instructor is not satisfactory, he should not be used. If it is not handled carefully, this will cause some hard feelings. Poor instructors will wreck the training program if they are allowed to instruct actual courses.

Multiple-plant training requires careful coordination by one central agency. If plants are doing entirely different work, it is possible to install training departments in each; but the cost will be higher than that for centralizing training control.

Carefully controlled publicity is necessary to keep the supervisors and workers informed of the availability and

advantages of the training program. It is essential to keep management continually informed as to the cost and saving of the training department.

Free training, when it is not required for the job, is not likely to produce good results. The reason for this is lack of interest on the part of those taking such training. Further, free supplementary training is not economical. A small charge for such training will pay its way and ensure trainee attendance and interest after working hours.

TRAINING-DEPARTMENT ORGANIZATION

Research is that division of training dealing with testing, methods, and analysis. *Testing* requires test construction and often administration of the tests, as well. *Methods* covers the various devices used in the process of instruction. *Analysis* is that section which is continually justifying the costs and evaluating the results of training.

Standards is the division responsible for the four basic types of courses. These are *introductory, shop, office,* and *supervisory* training. Standards are set and courses are approved and inspected by this group.

Coordination is the third division. It actually puts the training into force. This division makes all materials and space available for training. It also schedules all training.

INSTRUCTION

One of the most important factors in instruction is the proper outline for the course. The other leading factor is the proper use of visual aids to make the training clear and *interesting*. Proper visual aids are designed to present the information to the trainee effectively. The pure lecture method has been shown to be almost useless for adult industrial instruction.

Introductory training has its greatest justification in two main accomplishments: (1) to raise morale from the start by making the worker quickly feel at home; (2) to answer the worker's questions. Otherwise, much of the valuable

time of the worker, the supervisor, and the coworker on the job will be taken up unnecessarily.

Shop training is set up so as to be exactly like the shopwork. It is often done by a supervisor at the place of work. The supervisor has a definite program and time schedule for this training. He does not just fit it in as time allows. Often this training involves but one individual at a time. Some parts, such as safety training, are given to several of the newer workers together.

Service training and sales training have the disadvantage of public reaction if they are carried on in the presence of the public. Such training is given under conditions simulating situations encountered on the job. A line of definite distinction is made between processes that are learned and those that involve looking up information efficiently. No attempt should be made to push useless memory facts upon the trainee if these facts are looked up by workers actually on the job.

Supervisory training is probably the most effective of all training tools for other than beginners. Proper supervision will reduce turnover and increase efficiency. Supervisory training is a continuing process. It is carried on periodically, year after year. The subjects covered are repeated every 2 or 3 years. There is ample material to run courses at reasonable intervals for several years before repetition is required. Such courses may be dropped in the summer and given in two or more series during the winter.

EXAMINATIONS AND RECOGNITION

Final examinations of as practical a nature as possible must be given always. Failure by beginners calls for dismissal. Failure by older workers should limit advancement. Failure by supervisors is less frequent, but it may actually cause the supervisor to improve. Required courses for supervisors should be repeated soon when they are not passed successfully. Repeated failure is cause for retardation of advancement or even for dismissal.

Recognition by certificate, card, or pay increase should be the reward for successful completion of required courses. Outstanding performance should be indicated appropriately to the trainee and his immediate supervisor.

The fill-in type of question in examination seems to be one of the best for industrial purposes. It can be rapidly given and quickly scored. It tests knowledge with less room for guessing than exists in other types of question. The other type of examination is actual performance of the assigned job while still in training.

WORK REVIEW

The work-review program is the actual yardstick of training and testing results. The 3-month review is the most important. Early in the worker's career in the company, it gives indication of correlation with training and testing. Later reviews are mainly for advancement or for checking bad work habits.

The proper use of the work-review form produces a record that measures the value of each worker. It also produces a record that is of value for the selection of new supervisors from the over-all plant.

COUNSELING

The cost of counseling can be measured by the saving of a worker who would otherwise resign. When the cost of a single turnover has been obtained, this can be applied directly to the counselor's cost as a saving. If the worker then resigns at a later date, a portion of the turnover is charged against the counselor. This charge decreases as the period between the counseling period and the actual resignation lengthens.

Other accomplishments of the counselor result in some decrease in turnover that cannot be separated easily.

FOLLOW-UP

The preceding chapter showed the various means of follow-up on the training program. Means were shown for

collecting records. These records give results that lead to correction of the training and testing programs. The records measure effectiveness of the individual, the instructor, the supervisor, and the tests.

CONCLUSION

This chapter sums up many of the points of previous chapters. It shows the whole program in brief. The relation of each part to the rest is thus seen more clearly. Training has become an essential element in all successful business. Its success relies wholly upon actual dollar-and-cents results. When training starts to earn its way—with a profit—it has become an essential part of modern industry. Then, and only then, is it safe from the sharp knife of forced economy.

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